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Little Lost-Birch Creek

DRAFT

Range Management Environmental Statement

United States Department of the Interior

IN REPLY REFER TO
LL/BC 1792

BUREAU OF LAND MANAGEMENT
Idaho Falls District Office
940 Lincoln Road
Idaho Falls, Idaho 83401

We have forwarded for your review and comment the draft environmental statement on proposed range management in the Little Lost-Birch Creek area of Eastern Idaho. This draft has been prepared by a team of resource specialists from the Bureau of Land Management.

The team has identified and analyzed the draft statement impacts associated with the implementation of the Bureau's proposed range management program for the area. Considered in the document are the impacts associated with implementing grazing systems in twenty-four (24) allotments, including the necessary range improvements. The document further offers for your consideration four (4) alternatives to that proposed action and an analysis of the impacts that would be associated with the implementation of each of those alternatives.

A public hearing is scheduled at 7:00 p.m., June 13, 1979, for the purpose of receiving oral and written testimony on the document. This hearing will be held in the Council Chambers, City Electrical Building, 140 South Capital, Idaho Falls, Idaho. We have attached further information on the public hearing including a registration card should you choose to testify. In order to have a list of witnesses available in the Idaho Falls District Office one day before the hearing, we must have the registration card in this office at the close of business June 12. Should you have any questions concerning the hearing, please call our team leader, Dee Williamson, at (208) 524-4215.

Further written comments are invited, and these must be received on or before July 2, 1979, to be considered in the preparation of the final environmental statement. Oral and written comments will receive equal consideration in preparing the final environmental statement. Written comments are to be submitted to:

CONSERVE AMERICA'S ENERGY

Save Energy and You Serve America!

Dee Williamson
Bureau of Land Management
Little Lost-Birch Creek ES Team Leader
940 Lincoln Road
Idaho Falls, Idaho 83401

We look forward to your comments on this major effort, and we thank you for your past and future assistance in our efforts to manage public lands in the best interests of all concerned.

Sincerely yours,

Harold E. Issacson

Harold Issacson
Asst. District Manager

Enclosures (2)

1. Hearings Handout
2. Registration Form

HEARINGS HANDOUT

GENERAL INFORMATION REGARDING THE PUBLIC HEARINGS ON THE DRAFT ENVIRONMENTAL STATEMENT OF PROPOSED RANGE MANAGEMENT IN THE LITTLE LOST-BIRCH CREEK AREA, IDAHO.

Public Hearing Schedule

Idaho Falls, Idaho

June 13, 1979 at 7:00 p.m. in the
Council Chambers, City Electrical Bldg.
140 So. Capital, Idaho Falls, Idaho

Authority

The hearing is being held pursuant to the objectives to the National Environmental Policy Act (PL 91-190; 83 Stat. 852,853).

Purpose

The hearing is for the purpose of receiving comments (testimony) on the analysis of the proposed action and the four (4) alternatives addressed in the draft environmental statement. Testimony presented at this hearing will be used in the preparation of the final environmental statement.

Composition of the Hearing Panel

The public hearing proceedings will be conducted by the Idaho BLM Associate State Director. The Associate State Director will be accompanied by a Technical Panel composed of the Little Lost-Birch Creek Environmental Statement (ES) Team Leader, Technical Coordinator, and representatives of the Bureau of Land Management staff of Resource specialists involved in preparation of the draft ES. The Associate State Director or a Technical Panel member recognized by the Associate State Director may ask questions of the witness for the purpose of clarifying points in the testimony.

Oral Statements

Persons wishing to give testimony will be limited to ten (10) minutes, with written submissions invited at the hearing.

Prior to giving testimony at the public hearing, participants are requested to complete the attached hearing registration form. Registration forms may also be obtained by contacting Dee Williamson, Team Leader, Bureau of Land Management, Little Lost-Birch Creek Environmental Statement, 940 Lincoln Rd. Idaho Falls, Idaho 83401, telephone (208) 524-4215. Registration forms must be returned to the aforementioned address by June 12, 1979. Participants may register at the registration desk prior to the hearing. Time preferences for presentation of oral statements will be honored whenever possible. A tentative listing of speakers, in the order they will be called, will be available June 13 at the Bureau of Land Management's Idaho Falls District Office, 940 Lincoln Road or on June 13 at the registration desk.

After the last witness present has been heard, the Associate State Director will consider the request of any other person present and wishing to testify. Only one witness will be allowed to represent the viewpoints of a single organization. However, any witness will be permitted to give germane testimony if it is offered as the views or opinion of a private citizen.

General

Witnesses must direct their testimony to the contents of the document and to specific aspects of the proposed LL-BC area range management proposal or alternatives to that proposal.

Written Statements

Written statements from those unable to attend the hearing should be addressed to:

Dee Williamson
Team Leader
Bureau of Land Management
Little Lost-Birch Creek Environmental Statement
940 Lincoln Road
Idaho Falls, Idaho 83401

Written statements will be accepted on or before July 2, 1979.

PUBLIC HEARINGS REGISTRATION FORM

For public hearings on the draft environmental statement of proposed range management in the Little Lost-Birch Creek area of eastern Idaho.

(Please Print)

To: Dee Williamson, Team Leader, Bureau of Land Management,
Little Lost-Birch Creek Environmental Statement
940 Lincoln Road, Idaho Falls, Idaho 83401

From: Name_____

Street Address_____

City, State_____ Zip Code_____

Representing_____

I wish to appear at the public hearing on Wednesday, June 13, 1979, to express my views.

I intend to submit written documentation: Yes_____ No_____

_____
Signature

Verbal testimony will be limited to 10 minutes; written testimony will be accepted at the above address until close of business July 2, 1979. Registration forms are to be submitted to the Idaho Falls District Office before the close of business June 12, 1979.

Public Review of Statement

The following locations have copies of the draft statement available for public review:

U.S. Post Office
Howe, Idaho 83244

Lost River Community Library
126 So. Front
Arco, Idaho 83213

U.S. Post Office
Terreton, Idaho 83450

Clark County Courthouse
Dubois, Idaho 83432

Challis National Forest
District Ranger's Office
Mackay, Idaho 83251

Challis National Forest
Supervisor's Office
Challis, Idaho 83226

BLM
550 W. Fort Street
Boise, Idaho 83724

Bureau of Land Management B-214
P.O. Box 1889
Coeur d'Alene, Idaho 83814

Bureau of Land Management B-215
Salmon District Office
P.O. Box 430
Salmon, Idaho 83467

Bureau of Land Management B-216
Shoshone District Office
P.O. Box 2B
Shoshone, Idaho 83352

Bureau of Land Management B-217
Boise District Office
230 Collins Road
Boise, Idaho 83702

Bureau of Land Management B-218
Burley District Office
200 South Oakley Highway
Burley Idaho 83318

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BLM Library
D-553A, Building 50
Denver Federal Center
P. O. Box 25047
Denver, CO 80225-0047

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DEPARTMENT OF THE INTERIOR

DRAFT ENVIRONMENTAL STATEMENT

PROPOSED RANGE MANAGEMENT PROGRAM
FOR THE
LITTLE LOST-BIRCH CREEK
PLANNING UNIT

Prepared by

DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

State Director, Idaho State Office

SUMMARY

(X) Draft ( ) Final Environmental Statement

Department of the Interior, Bureau of Land Management-lead Agency

1. Type of Action: (X) Administrative ( ) Legislative

2. Brief Description of the Action: The Little Lost-Birch Creek ES area is located 67 miles northwest of Idaho Falls, Idaho and encompasses 435,251 acres. The Bureau of Land Management proposes to implement a range management program on public (332,570 acres) and withdrawn (65,673) lands (Department of Energy) within the Little Lost-Birch Creek Planning Unit of the Idaho Falls District in eastern Idaho. Proposed use for the area is 27,164 animal unit months (AUMs) for livestock and 10,453 AUMs for wildlife. After 15 years there would be an additional 13,816 AUMs available of which 3,007 AUMs could be allocated to wildlife and 10,809 AUMs to livestock. Grazing treatments would be implemented on 398,243 acres of public and withdrawn land consisting of rest-rotation on 181,232 acres, deferred rotation on 183,883, and seasonal grazing on 33,128 acres.

3. Summary of Environmental Impacts: Vegetation would improve in quantity, providing increased forage for both livestock and wildlife. Terrestrial habitat would remain stable or would improve in condition. This would ensure that present big game population objectives would be met. Fish populations would increase 50% in the fenced area of Wet Creek and Squaw Springs. Removal of the water gaps on Big Spring Creek would increase the fish population by 10%.

   Adverse impacts would include a short term loss of productivity on 23,000 acres proposed for vegetation manipulation. Livestock use before June 15th and after October 1 on some allotments would conflict with wildlife use. Fences would increase the risk of mortality to antelope and be a hinderance to recreation movement. Cultural sites could be damaged by livestock trampling. Construction of range improvements could destroy subsurface values. Decreases in ranch income would result from the proposed action.

4. Alternatives Considered:
   a. Continue present management (no action);
   b. Eliminate livestock grazing;
   c. Livestock forage maximization - the initial stocking rate would be 27,164 AUMs for livestock and an additional 10,453 AUMs for wildlife. At the end of 15 years there would be 19,570 AUMs available which could be allocated to livestock;
   d. Elimination of spring, late fall and winter grazing with additional consideration for wildlife populations - the initial stocking rate would be 10,339 AUMs for livestock and 10,453 for wildlife. After 15 years there would be an additional 20,666 AUMs available of which 3,160 AUMs could be allocated to wildlife and 17,506 AUMs to livestock.

5. Comments Were Requested From:

   See Chapter IX

6. Date Draft Statement Made Available to EPA and the Public:

   Draft: May 18, 1979

   Final:

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CHAPTER 1
DESCRIPTION OF PROPOSED ACTION

CHAPTER 1
DESCRIPTION OF THE PROPOSED ACTION
BACKGROUND

This environmental statement (ES) analyzes the site specific environmental impacts of a proposed rangeland management program on Public Lands administered by the Bureau of Land Management (BLM). It has been prepared in compliance with Section 102 (2) (c) of the National Environmental Policy Act (NEPA) 42 U.S.C. Q4321 et. seg..

The proposed action and alternatives were developed through the land use planning process (activity and multiple-use recommendations from the Management Framework Plan). Basically, the proposal allocates forage for use by livestock and wildlife (deer, elk, and antelope), which is just one part of the Bureau's overall range management program.

Figure 1-1 shows the location of the planning unit, which encompasses 332,570 acres of Public Land and 65,673 acres of land withdrawn for use by the Department of Energy (DOE) for nuclear research and development. These lands are referred to as the Idaho National Engineering Laboratory (I.N.E.L.). The BLM Idaho Falls District administers grazing on these withdrawn lands. The ES area also contains 20,160 acres of state land and 16,848 acres of private land. Land status is shown in Figure 1-2, and acreage breakdowns are shown in Table 1-1.

PROPOSED ACTION

Purpose

The purpose of the proposed action is to manage the rangeland on 332,570 acres of Public Land and 65,673 acres of withdrawn lands to protect, maintain and improve the condition of the soil and vegetation (as required by the Taylor Grazing Act, 1934, and the Federal Land Policy and Management Act, Public Law 94-579, 1976.)

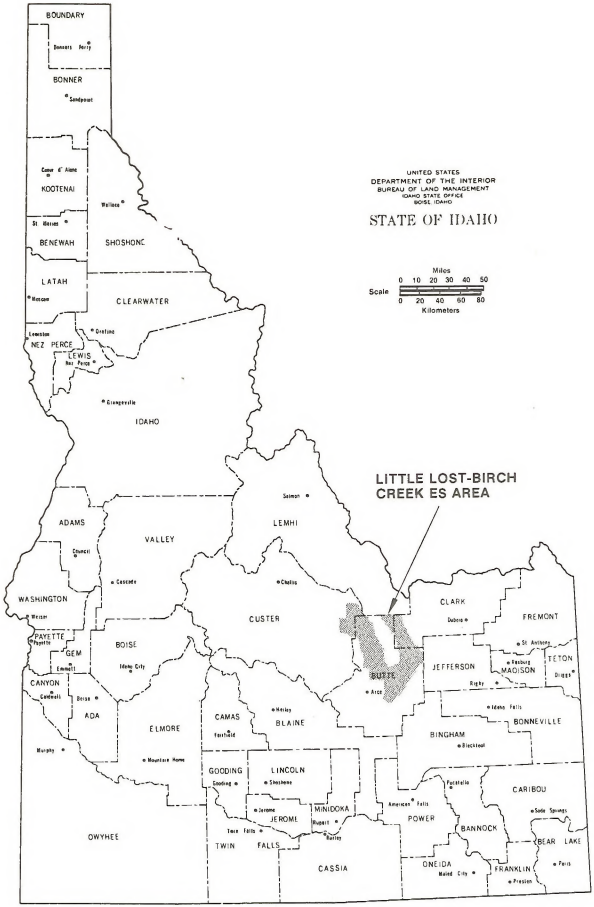
The proposal is to implement an improved rangeland management program in the Little Lost-Birch Creek ES area. Table 1-2 provides a comparison of the proposed action with the existing situation for the ES area. A reduction of authorized AUMs is proposed in the short term and an increase of AUMs is projected for the long term. Table 1-3 shows the proposed allocation of AUMs to livestock and wildlife.

TABLE 1-2

COMPARISON OF EXISTING SITUATION AND PROPOSED ACTION
FOR THE SHORT TERM (3-5 YEARS)

	Numbers of Allotments	Numbers of Operators	Authorized Livestock Use (AUMs)	1977[1] Licensed Use (AUMs)	Wildlife Use (AUMs)	Total
Existing Situation	31	30	29,864	21,885	9,860	39,724
Proposed Action	24	30	27,164		10,453	37,617
After 15 years	24	30	37,973		13,460	51,433

1/ Actual use varies from Licensed Use by about ± 1 percent.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Moscow
CLEARWATER
Lewiston
Orofino
NEZ PERCE
LEWIS
Nez Perce
Grangeville
IDAHO
Salmon
LITTLE LOST-BIRCH
CREEK ES AREA
ADAMS
Council
VALLEY
LEMHI
Cascade
Challis
WASHINGTON
Weiser
CUSTER
CLARK
Dubois
FREMONT
St. Anthony
PAYETTE
Payette
GEM
Emmett
BOISE
Idaho City
MADISON
Rexburg
TETON
Driggs
JEFFERSON
Rigby
BUTTE
Arco
CANYON
Caldwell
Nampa
ADA
Boise
ELMORE
Mountain Home
CAMAS
Fairfield
Hailey
BLAINE
Idaho Falls
BONNEVILLE
BINGHAM
Blackfoot
GOODING
Gooding
LINCOLN
Shoshone
Pocatello
CARIBOU
Soda Springs
Jerome
MINIDOKA
Rupert
American Falls
POWER
BANNOCK
BEAR LAKE
OWYHEE
TWIN FALLS
Twin Falls
JEROME
Burley
CASSIA
ONEIDA
Malad City
FRANKLIN
Preston
Paris
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
IDAHO STATE OFFICE
BOISE, IDAHO
STATE OF IDAHO
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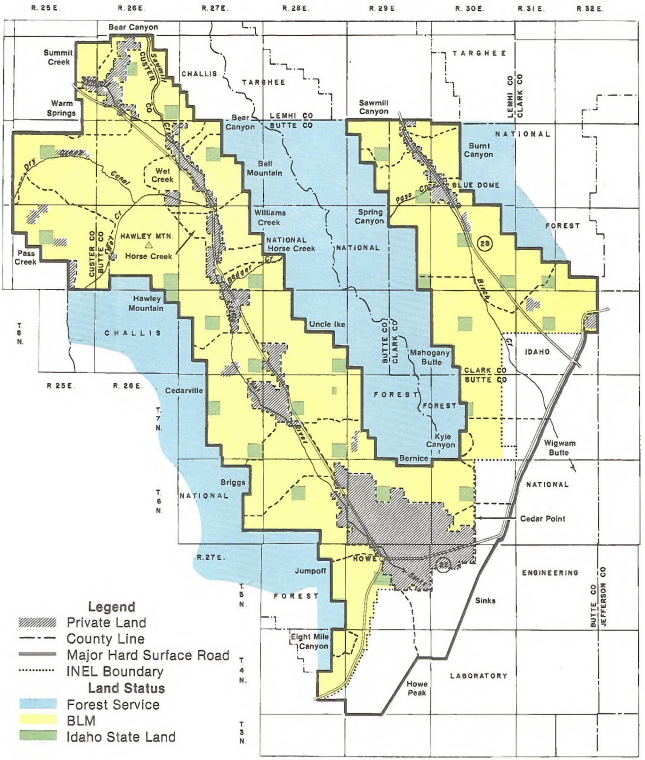
Kilometers

Figure 1-1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T. 3 N.
Bear Canyon
Summit Creek
Warm Springs
Custer Co.
Lemhi Co.
CHALLIS
TARGHEE
Bear Canyon
LEMHI CO
BUTTE CO
Sawmill Canyon
LEMHI CO
CLARK CO
NATIONAL
Burnt Canyon
BLUE DOME
FOREST
Dry Creek
Wet Creek
Bell Mountain
Williams Creek
Spring Canyon
Pass Creek
HAWLEY MTN.
Horse Creek
NATIONAL
Horse Creek
NATIONAL
Pass Creek
CUSTER CO
BUTTE CO
Hawley Mountain
CHALLIS
Uncle Ike
BUTTE CO
CLARK CO
Mahogany Butte
IDAHO
GLARK CO
BUTTE CO
Cedarville
FOREST
FOREST
Kyle Canyon
Bernice
Wigwam Butte
Big Lost River
Briggs
NATIONAL
NATIONAL
Cedar Point
ROWE
Jumpoff
FOREST
ENGINEERING
Sinks
BUTTE CO
JEFFERSON CO
Eight Mile Canyon
LABORATORY
Howe Peak
Legend
Private Land
County Line
Major Hard Surface Road
INEL Boundary
Land Status
Forest Service
BLM
Idaho State Land

Figure 1-2

TABLE 1-1

LITTLE LOST - BIRCH CREEK UNIT ACREAGE BY OWNERSHIP AND ALLOTMENT

Allotment	Public Land	Withdrawn[1]	State	Private	Total
Bear Canyon	3,538			80	3,618
Bell Mountain	6,633		640	200	7,473
Bernice	22,687		1,840	480	25,007
Briggs Canyon	14,691			80	14,771
Burnt Canyon	5,713			480	6,193
Cedar Point	1,274			840	2,114
Cedarville	19,655		1,900	3,720	25,275
Eight Mile Canyon	1,684				1,684
Hawley Mountain	71,655		5,280	2,660	79,595
Horse Creek	5,559				5,559
Howe Peak	13,277	18,209	560		32,046
Jumpoff	14,677		1,280	580	16,537
Kyle Canyon	711				711
Mahogany Butte	34,935	17,516	2,240	1,200	55,891
Pass Creek	17,949		1,280	1,280	20,509
Sawmill Canyon	5,839		640	40	6,519
Sinks		19,781		640	20,421
Spring Canyon	37,005		1,920	2,600	41,525
Summit	3,216				3,216
Uncle Ike	27,872		1,940		29,812
Warm Springs	6,711		640	688	8,039
Wet Creek	6,806			1,280	8,086
Wigwam Butte	5,120	10,167			15,287
Williams Creek	5,363				5,363
	332,570	65,673	20,160	16,848	435,251

[1]Lands withdrawn for use by the DOE.
Source: USDI, 1977

TABLE 1-3

PROPOSED LIVESTOCK AND WILDLIFE USE (IN AUMs) AFTER IMPLEMENTATION

Animal	Season of Use	Proposed Use At Time Of Implementation (AUMs)
Antelope	Year long	6,786
Deer	Year long	2,490
Elk	Year long	1,177
Cattle	Various	21,313
Sheep	Various	5,851
Total		37,617

Proposed grazing systems for management of forage resources are summarized in Table 1-4 and the treatment areas are identified in Figure 1-3.

TABLE 1-4

SUMMARY OF GRAZING MANAGEMENT PROPOSED

Proposed Action Component	Total BLM Acres[1]	Authorized Livestock Use AUMs	1977 Licensed Use (AUMs)	Proposed Level of Livestock Grazing Authorized Use (AUMs)
Decrease Level of Use and Graze Under Deferred Rotation Systems (10 Allotments)	183,883	13,611	8,841	13,249
Decrease Level of Use and Graze Under Rest-Rotation Systems (7 Allotments)	181,232	14,162	11,940	11,678
Increase Level of Use and Graze Seasonally (2 Allotments Increase) (5 Allotments Decrease)	33,128	2,091	1,104	2,237
Totals	398,243	29,864	21,885	27,164

[1]Includes withdrawn lands

Components of the proposed action are further described in this section.

The rangeland management program that is finally selected through the land use planning decisions would be implemented over a period of five years. Stocking levels and periods of livestock use would be coordinated with the livestock operators. Grazing management systems would be incorporated into allotment management plans (AMPs) developed in cooperation with the livestock operators and other involved agencies.

Objectives

The proposed action is designed to:

1. Supply the following livestock and wildlife AUMs.

	Season	AUM's	Numbers of Animals
Cattle	Spring	5,876	3,917
	Summer	10,623	2,357
	Fall/Winter	5,724	1,908
Sheep	Spring	1,446	4,820
	Summer	322	358
	Fall/Winter	3,173	5,288

Antelope	Spring	1,469	5,805
	Summer	1,784	5,152
	Fall/Winter	3,569	5,985
Deer	Spring	392	985
	Summer	277	400
	Fall/Winter	1,821	1,838
Elk	Spring	161	100
	Summer	224	100
	Fall/Winter	792	250

2. Improve the forage condition on 7 allotments containing 181,232 acres of federal land, approximately 54 percent of which are in less than good condition. Maintain the good to fair condition, and stable or upward trend on allotments containing 183,883 acres. In addition, maintain the good to excellent condition on 7 allotments containing 33,128 acres of federal lands.

3. Increase the number of acres in stable range trend from 163,559 to 211,673. This increase would result from improvement of fair to good condition range to good or excellent range and stabilizing in condition as the site reaches ecological potential.

4. Maintain the existing low erosion condition classes (398,243 acres) on soils in the planning unit.

5. Protect 12 miles of cold water fish habitat and approximately 11 miles of riparian vegetation to improve habitat for cold water fish and water quality, and to increase production.

6. Protect critical antelope fawning and sage grouse brooding areas in the Hawley Mountain allotment so that present numbers of these species can be maintained and eventual increases in their populations realized.

7. Protect critical deer winter range on Spring Canyon, Burnt Canyon, Howe Peak, and Mahogany Butte allotments to provide forage for present and future deer numbers.

8. Protect the recreation area (10 acres) along Birch Creek from livestock grazing.

9. Improve the water quality in Big Spring Creek. Maintain the existing good water quality in all other streams in the ES area.

10. By 1994, increase total livestock forage production to 37,973 AUMs. The 15 year time frame of the proposed action would allow the most complex livestock grazing system at least two full cycles. This would be a minimum time frame to reach planning objectives.

11. By 1994, increase total wildlife forage production to 13,460 AUMs.

Allocation of Forage

The total vegetation biomass (the amount of plant material) being produced in the ES area was estimated at 138,682,494 pounds using a modified version of the SCS Ecological Site Inventory Method (ESIM) for Public Lands. (See Appendix 1-1 for a description of ESIM).

Palatable biomass was separated from non-palatable biomass, and all non-palatable biomass, 107,404,094 pounds or 77 percent of the total, was allocated for watershed cover, visual aesthetics, etc. Modified Proper Use Factors (PUFs) were then applied to the total palatable biomass to determine biomass available for use as forage (30,093,600 pounds of available forage). All palatable biomass not allocated as forage, 1,184,800 pounds or 1 percent of the total, because it was in excess of that required for present livestock and wildlife numbers was also allocated for watershed cover, visual aesthetics, etc. (Table 1-5).

TABLE 1-5

ALLOCATION OF BIOMASS
(Annual Production)

	Pounds	Percent
Allocated to Watershed Cover	108,588,894	78.0
Allocated to Wildlife	8,362,400	6.0
Allocated to Livestock	21,731,200	16.0
Total Biomass	138,682,494	100.0

Available forage was broken down according to geographical units (use areas) and seasons. In non-competitive use areas, i.e., geographical units used solely by big game with no livestock use, available forage was allocated solely to big game. In competitive use areas, i.e., geographical units used by big game and by livestock, available forage was allocated first to wildlife with remaining available forage allocated to livestock. For instance, if spring cattle use created a forage deficiency for wintering deer in a particular use area, the spring cattle use was adjusted to leave sufficient forage for wintering deer.

Riparian vegetation would be protected from livestock grazing along 23 miles of stream banks to improve fish and wildlife habitat. Fencing would be as follows:

Wet Creek - Fence 11 miles
Squaw Creek - Fence 1 mile
Deer Creek - No grazing before September 1st - 3 miles
Big Spring Creek - No grazing before September 1st, exclude livestock from present water gaps - 5 miles
Birch Creek - additional water provided near Birch Creek to relieve grazing pressure in the present water gaps - 3 miles.

Forage was allocated for existing populations of antelope and elk. For Mule deer, forage was allocated to accommodate a 25% population increase in Birch Creek Valley and a 10% population increase in Little Lost Valley. (See Appendix 1-2 for a detailed explanation of the forage allocation methodology).

Administrative Changes

The following administrative changes would be made to help achieve the objectives:

1. Change the class of livestock from sheep to cattle on the following allotments: Briggs Canyon, Sinks (AEC East of Howe), Bernice, Kyle Canyon, Hawley Mountain, Pass Creek, Sawmill, and Wigwam Butte (158,433 acres; approximately 4,400 sheep to 400 cattle).

2. Combine the following allotments:

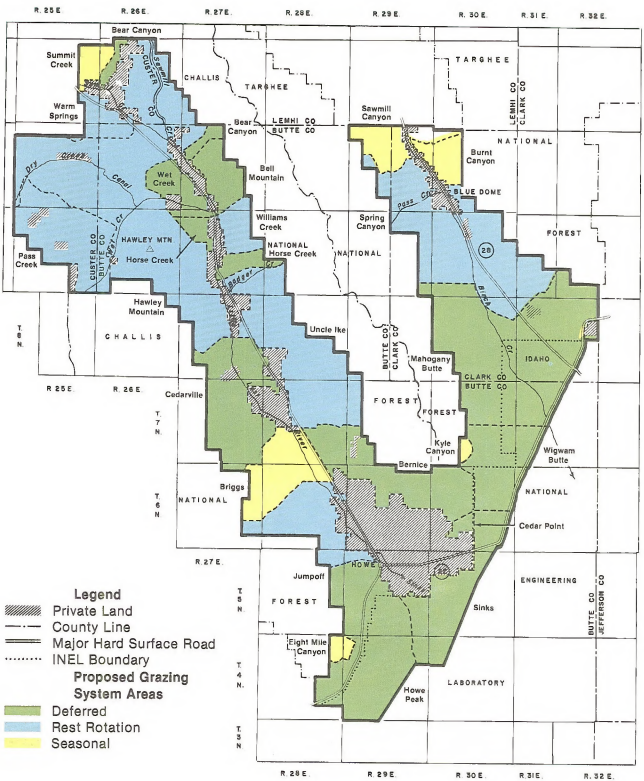
*Bear Canyon and Mays
*Bell Mountain and Scott
*Hawley Mountain and Deer Creek
*Horse Creek and Clyde
*Jumpoff and Hansen Pass
*Wet Creek and Clyde School
*Wigwam Butte and AEC Kyle Canyon

*Denotes the name of combined allotments

Grazing Management Systems

Grazing livestock on rangelands are selective relating to plant species and areas. The most palatable plants and the most accessible areas are grazed first and heaviest. Plants grazed heavily one year are usually heavily grazed the following year, which leads to their gradual loss. This is also the trend for the preferred areas. When forage production of the most desirable plants falls below the needs of the animal, they will start grazing the less desirable species and/or areas, which leads to an ever enlarging area of range deterioration under unmanaged continuous grazing (Stoddart and Smith 1955; Hormay 1970). Grazing systems are utilized to regulate livestock grazing, to alleviate a particular problem, and/or give a desired result. The proposal for the ES area involves three primary grazing systems: rest rotation, deferred rotation, and seasonal. The grazing treatment areas are identified in Figure 1-3. Allocation of forage for domestic livestock is shown in Table 1-6 and for wildlife in Table 1-7.

The harmful effects of selective grazing of preferred plants can be reduced by resting the range at appropriate intervals. An allotment is usually fenced into pastures to facilitate controlled pasture grazing and pasture resting. A grazing formula is tailored for each allotment; the number of pastures and amount and timing of pasture grazing and resting are based on key forage plant physiological needs, existing range conditions, and potential for improvement.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Summit Creek
Warm Springs
CHALLIS
TARGHEE
LEMHI CO
BUTTE CO
Sawmill Canyon
LEMHI CO
CLARK CO
NATIONAL
Burnt Canyon
BLUE DOME
FOREST
Dry Creek
Canal
Wet Creek
Bell Mountain
Williams Creek
Spring Canyon
Pass Creek
CUSTER CO
BUTTE CO
HAWLEY MTN
Horse Creek
NATIONAL
Horse Creek
Hawley Mountain
Uncle Ike
BUTTE CO
CLARK CO
Mahogany Butte
IDAHO
CLARK CO
BUTTE CO
Cedarville
FOREST
FOREST
Kyle Canyon
Bernice
Wigwam Butte
Briggs
NATIONAL
NATIONAL
Cedar Point
HOWE
Jumpoff
FOREST
ENGINEERING
Sinks
BUTTE CO
JEFFERSON CO
Eight Mile Canyon
LABORATORY
Howe Peak
Legend
Private Land
County Line
Major Hard Surface Road
INEL Boundary
Proposed Grazing System Areas
Deferred
Rest Rotation
Seasonal

Figure 1-3

TABLE 1-6

PROPOSED GRAZING MANAGEMENT TREATMENTS AND ALLOCATION OF FORAGE TO DOMESTIC LIVESTOCK

Management Component	Allotment	Federal Land Acreage Public Land	Federal Land Acreage With-drawal	Authorized Livestock AUMs	1977 Licensed Use (AUMs)	Proposed Level Livestock Use (AUMs) on Fed. Land	Approximate Season of Use	Approximate Number and Class of Livestock	Adjustments From Authorized Livestock Use on Fed. Land AUMs	Adjustments From Authorized Livestock Use on Fed. Land Percent
Deferred Rotation	Bear Canyon	3,538		352	353	327	05/16 to 10/15	66c	-25	-7
	Bell Mountain	6,633		544	547	486	05/16 to 08/30	62c	-58	
							11/01 to 12/02	266c		
	Bernice	22,687		919		919	05/01 to 06/15	300c	0	0
							12/16 to 01/15	460c		
	Horse Creek	5,559		643	640	643	05/16 to 07/15	167c	0	0
							10/16 to 11/21	248c		
	Cedarville	19,655		3,594	2,242	* 3,767	05/01 to 07/15	723c	+173	+5
							10/01 to 12/19	725c		
	Howe Peak	13,277	18,209	2,400	1,543	2,400	05/10 to 06/11	2,372s	0	0
							11/01 to 01/15	3,206s		
	Mahogany Butte	34,935	17,516	1,810	1,679	1,810	05/01 to 06/30	1,200s	0	0
							12/11 to 02/14	3,300s	0	0
	Sinks		19,781	1,511	1,234	1,434	05/01 to 12/05	205c	-77	-5
	Wet Creek	6,806		602	603	602	05/16 to 07/15	240c	0	0
							10/16 to 12/30	32c		
	Wigwam Butte	5,120	10,167	1,236		861	05/01 to 06/15	417c	-375	-33
							11/23 to 01/20	78c		
Totals		118,210	65,673	13,611	8,841	13,249				
Rest-Rotation	Hawley Mtn	71,655		5,589	3,865	* 5,612	05/01 to 12/31	10h	+23	+1
							05/01 to 11/30	25c		
							05/01 to 01/15	713c		
	Jumpoff	14,677		760	753	562	05/01 to 08/20	120c	-198	-26
							12/01 to 01/11	90c		
	Pass Creek	17,949		1,955	1,883	1,055	05/16 to 06/30	848c	-900	-46
							08/01 to 08/30	207c		
	Spring Canyon	37,005		2,979	2,890	2,090	05/16 to 12/04	225c	-889	-30
							05/16 to 06/30	535s		
							10/01 to 01/22	400s		
	Uncle Ike	27,872		903	904	903	05/01 to 06/30	145c	0	0
							10/01 to 10/23	145c		
							11/16 to 01/30	202c		
	Warm Springs	6,711		1,641	1,311	1,285	05/16 to 10/15	257c	-356	-22
	Williams Creek	5,363		335	334	171	05/16 to 06/30	45c	-164	-49
							11/06 to 12/31	45c		
Totals		181,232	0	14,162	11,940	11,678				
Seasonal	Briggs Canyon	14,691		720	395	697	05/10 to 05/31	500c	-23	-3
							09/07 to 09/27	466c		
	Burnt Canyon	5,713		290	281	* 505	07/16 to 10/31	98c	+215	+74
							09/12 to 09/30	1,620s		
	Cedar Point	1,274		132		92	12/22 to 01/22	125c	-40	-30
	Eight Mile Cyn	1,684		225		51	11/01 to 11/30	51c	-174	-77
	Kyle Canyon	711		70	70	43	06/16 to 09/15	16c	-27	-39
	Sawmill Canyon	5,839		384	88	* 579	07/16 to 08/13	600c	+195	+51
	Summit	3,216		270	270	270	07/01 to 10/29	68c	0	0
Totals		33,128	0	2,091	1,104	2,237				
GRAND TOTALS		332,570	65,673	29,864	21,885	27,164			-2,700	-9

*Proposed livestock use on federal lands exceeds existing stocking rates on these allotments. This resulted from redistribution of livestock use between allotments where the same permittee has a shortage of forage in one allotment and a forage surplus in another. Stocking levels would not exceed carrying capacity in any allotments.

TABLE 1-7

PROPOSED GRAZING MANAGEMENT TREATMENTS AND ALLOCATION OF FORAGE TO WILDLIFE

Allotment	ANTELOPE			DEER			ELK		
	Number of Animals	Season of Use	AUMs of Forage Allocated to Antelope	Number of Animals	Season of Use	AUMs of Forage Allocated to Deer	Number of Animals	Season of Use	AUMs of Forage Allocated to Elk
Deferred Rotation:									
Bear Canyon	94	Sp,S,F/W	37	73	Sp,S,F/W	51			
Bell Mountain	300	Sp,S,F/W	172	197	Sp,S,F/W	142			
Bernice	800	Sp,S,F/W	331	148	Sp,F/W	120			
Horse Creek	535	Sp,S,F/W	234	37	Sp,S,F/W	36			
Cedarville	1,200	Sp,S,F/W	406	644	Sp,S,F/W	405			
Howe Peak	2,390	Sp,S,F/W	677	133	Sp,S,F/W	119			
Mahogany Butte	950	Sp,S,F/W	399	120	Sp,F/W	79			
Sinks	600	Sp,S,F/W	574		Sp,S,F/W	63			
Wet Creek	250	Sp,S,F/W	113						
Wigwam Butte	300	Sp,S,F/W	129						
Rest-Rotation:									
Hawley Mountain	2,270	Sp,S,F/W	847	802	Sp,S,F/W	670	188	Sp,S,F/W	708
Jumpoff	1,185	Sp,S,F/W	481	151	Sp,S,F/W	134			
Pass Creek	500	Sp,S,F/W	194	96	Sp,S,F/W	58	50	Sp,S,F/W	419
Spring Canyon	1,750	Sp,S,F/W	686	200	Sp,S,F/W	152			
Uncle Ike	1,200	Sp,S,F/W	455	132	Sp,F/W	107			
Warm Springs	300	Sp,S,F/W	102	15	Sp,S,F/W	11	12	Sp,S,F/W	50
Williams Creek	400	Sp,S,F/W	155	186	Sp,S,F/W	164			
Seasonal:									
Briggs Canyon	800	Sp,S,F/W	370	14	F/W	14			
Burnt Canyon	500	Sp,S,F/W	228	56	Sp,S,F/W	43			
Cedar Point				120	Sp,S,F/W	100			
Eight Mile Canyon	12	Sp,S,F/W	6	36	Sp,S,F/W	22			
Sawmill	350	Sp,S,F/W	128						
Summit	156	Sp,S,F/W	62						
Totals			6,786			2,490			1,177

Rest Rotation Grazing

Under a rest rotation grazing system, grazing is deferred on various parts of an allotment during succeeding years, and the deferred parts are allowed complete rest for one or more years (Society for Range Management, 1974). The allotment is divided into two or more pastures, usually with comparable grazing capacities. Each pasture is systematically grazed and rested, providing for livestock production and other resource values, while simultaneously maintaining or improving the vegetation cover, hence providing greater protection of the soil resource against wind and water erosion (Johnson 1965; Hormay 1970; Ratliff et al. 1972; Ratliff and Reppert 1974).

Rest rotation grazing systems may include several treatments depending upon the objectives for the allotment and the number of pastures. Utilization of available forage would not exceed 50 percent on an allotment basis annually. However, utilization could vary from 50 to 60 percent on the individual grazing treatment area. This system allows desirable forage species (Bluebunch Wheatgrass, Indian ricegrass and Black sagebrush) to recover vigor and reproduce. Rest rotation grazing systems are included in 7 allotments encompassing 181,232 acres.

Rest rotation grazing systems were recommended on allotments which exhibit some or all of the following characteristics:

1. Substantial improvement in range condition is desired and attainable through grazing management. In these allotments the majority of the range is in poor to fair condition. In addition there are large areas of poor condition range that is rated at above 32 acres/AUM.
2. At least one full year of rest is needed for seedling establishment.
3. Have the ecological potential for improvement in range condition.
4. Have developed water or the potential for developed water.
5. Are already fenced into pastures or could be fenced with a relatively small amount of new fence.

Deferred Rotation Grazing

Deferred rotation is the discontinuance of grazing on various parts of an allotment in succeeding years. This allows each part or pasture to rest successively during the growing season to permit seed production, establishment of seedlings, and restoration of plant vigor (Society for Range Management, 1974). One or more pastures are grazed during the spring, while the remaining one or more pastures are rested until after seed ripening of key species and then grazed. Deferred rotation grazing differs from rest rotation grazing in that there is no year long rest provided for any part of the allotment. Utilization of an allotment basis would not exceed 50 percent of the available forage annually. Important forage plants that would be considered for key species include Bluebunch Wheatgrass, Idaho Fescue and Black Sagebrush. Deferred rotation grazing systems are included in 10 allotments encompassing 183,883 acres.

Deferred rotation grazing systems were recommended on the basis of some or all of the following criteria:

1. Allotments are primarily in good and fair condition or have a stable or upward trend.

2. Allotments which are grazed by sheep. Since sheep are herded constantly, intensity of grazing and area under use is highly selective. Because of this flexibility, grazing systems can be implemented with a minimum of management facilities.
3. Allotments which have present pasture divisions, small size, or split season of use.

Seasonal Grazing

Seasonal grazing is restricted to a specific season (Society of Range Management 1974). Allotments are not necessarily divided into pastures, but are grazed at a moderate rate during the same period of time each year. An example may be 7/1 to 9/15 annually. Seasonal grazing would be proposed on allotments in good condition, with a moderate stocking rate and usually for short periods (2 to 3 weeks) during spring, and longer periods for late summer and fall. Utilization of available forage would not exceed 50 percent of the available forage on an allotment basis annually. Seasonal grazing is the primary system in 7 allotments encompassing 33,128 acres.

Seasonal grazing was recommended for those allotments based on some or all of the following criteria:

1. Maintenance of range conditions is desired.
2. Past and current livestock use has been on a seasonal basis and range is producing at a satisfactory level.
3. Are too small to be effectively managed under some type of rotation system.

Sheep on Burnt Canyon, Howe Peak, and Mahogany Butte (Deferred Rotation), and Spring Canyon (Rest Rotation), would be herded in such a manner that little or no sheep use would be made on crucial deer winter range. Crucial habitat is defined as that habitat where wildlife tend to concentrate during periods of stress or for other reasons, where the size and habitat quality of those areas can be the major limiting factor or the size of a given population. Burnt Canyon has 3,704 acres, Howe Peak 5,360 acres, Mahogany Butte 8,155 acres, and Spring Canyon 5,296 acres of crucial deer winter range.

On Hawley Mountain allotment, crucial antelope fawning (41,500 acres) and sage grouse brooding (40,691 acres) areas would be protected by deferring livestock use on native range until after July 1 (prior to July 1, grazing would be on crested wheat seedings or on non-crucial areas).

Support Requirements

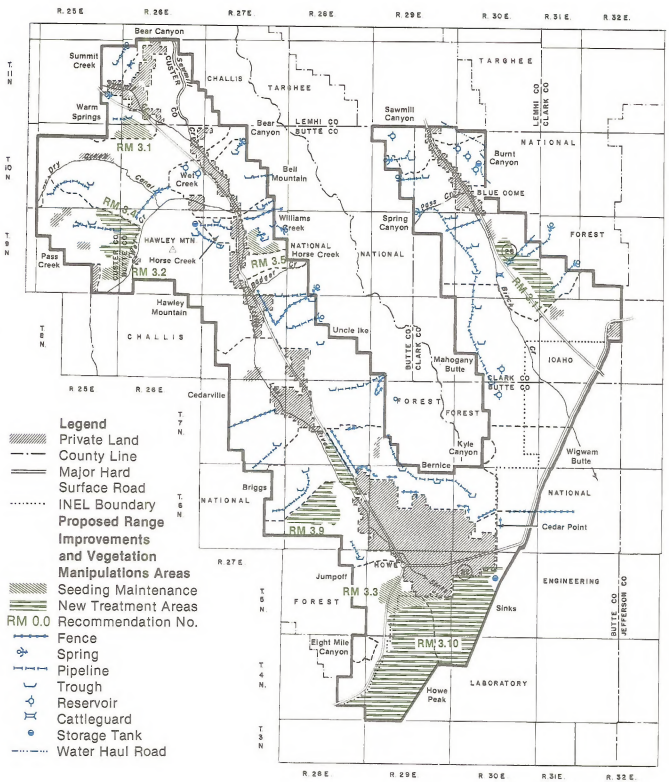
Range Improvements

The location of range improvements and vegetative manipulations are shown in Figure 1-4. Table 1-8 shows the proposed range improvements and vegetative manipulations by allotment for the Little Lost-Birch Creek ES area. These improvements and vegetative manipulations are needed to implement the grazing systems, achieve better distribution of livestock, and increase livestock production by achieving proper utilization of forage over the entire area, as well as to make new areas suitable for livestock use. In addition, wildlife grazing distribution would be improved through water developments. Table 1-9 indicates the range improvement cost schedule and major annual maintenance costs of the proposed range improvements. Major maintenance would be done by the BLM.

1. Fences - The proposal would require 93.3 miles of additional fence. Steel posts would be colored to blend with the landscape. Fence construction would disturb an estimated 2 acres per mile. Special standards in fence construction are: a gate or cattleguard would be installed where fences would cross existing roads; in wildlife areas fences would be constructed according to BLM Manual requirements for the species; the top strand would be no higher than 42 inches, and the bottom strand would be at least 16 inches from the ground and would be smooth wire in antelope areas.

2. Springs - Three springs are proposed for development. Approximately 1.5 acres would be disturbed by the developments. Spring improvements would include fencing to prevent trampling and over-grazing of wet meadows surrounding the springs and to provide bird and small animal habitat and cover. The following special design features would be applied: after completion, the work area would be cleared of all trash; all cuts, fill, and excavations would be smoothed and blended with the surrounding area; and wet areas around springs would be retained by permitting some water flow at the site.

3. Water Troughs - Forty-five water troughs are proposed. About 3.9 acres of surface disturbance would result from installation of the water troughs. The following special design features would be met: small animal access and escape ramps would be provided in each water trough; the lip of the water troughs would not be higher than 2 feet above the ground. If water flow from the springs is sufficient, water would be maintained in all troughs between May 1 and October 30. Overflow would be discharged at least 50 feet from the water facility and the overflow areas would be fenced to exclude livestock and to provide additional protective cover for small animals and birds.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Warm Springs
CHALLIS
TARGHEE
LEMHI CO
BUTTE CO
CLARK CO
Sawmill Canyon
Burnt Canyon
BLUE COME
NATIONAL
FOREST
Spring Canyon
Bell Mountain
Wet Creek
Williams Creek
NATIONAL Horse Creek
Horse Creek
Pass Creek
HAWLEY MTN
Hawley Mountain
Uncle Ike
Mahogany Butte
IDAHO
Cedarville
Kyle Canyon
Wigwam Butte
Bernice
Briggs
Cedar Point
Howe
Jumpoff
ENGINEERING
Sinks
Eight Mile Canyon
Howe Peak
LABORATORY
JEFFERSON CO
RM 3.1
RM 3.2
RM 3.5
RM 3.8
RM 3.9
RM 3.10
Legend
Private Land
County Line
Major Hard Surface Road
INEL Boundary
Proposed Range Improvements and Vegetation Manipulations Areas
Seeding Maintenance
New Treatment Areas
RM 0.0 Recommendation No.
Fence
Spring
Pipeline
Trough
Reservoir
Cattleguard
Storage Tank
Water Haul Road

Figure 1-4

TABLE 1-8

PROPOSED RANGE IMPROVEMENTS AND VEGETATIVE MANIPULATION

Allotment	Fences		Spring Developments		Water Pipelines		Water Troughs		Reservoirs		Vegetative Manipulation		Storage Tanks	
	Miles	Acres Dist.	No.	Acres Dist.	Miles	Acres Dist.	No.	Acres Dist.	No.	Acres Dist.	Treatment Method	Acres	No.	Acres Dist.
Deferred Rotation:														
Bear Canyon	0.5	1.0	1.0	0.5										
Bell Mountain					2.0	2.4	2.0	0.2						
Bernice	13.0	26.0			8.0	9.6	3.0	0.3						
Cedarville	3.5	7.0			3.5	4.2	1.0	0.1						
Horse Creek					1.0	1.2	2.0	0.2						
Howe Peak											Control Brush Burn	7,000[c]		
Mahogany Butte					7.0	8.4	3.0	0.3	4.0	2.0				
Sinks	10.5	21.0												
Wet Creek							2.0	0.2						
Wigwam Butte	5.5	11.0												
Rest Rotation:														
Hawley Mountain	33.5*	67.0			8.0	9.6	7.0	0.4						
Jumpoff					1.5	1.8	1.0	0.1			Interseed Drill	4,000[a]		
Pass Creek	1.0**	2.0			2.5	3.0	2.0	0.1			Rotobeat & Interseed	4,500[d]		
Spring Canyon	6.0	12.0			15.0	18.0	6.0	0.6			Rotobeat & Interseed	4,500[a]		
Uncle Ike	10.8	21.6	1.0	0.5	10.0	12.0	6.0	0.6						
Warm Springs			1.0	0.5	1.5	1.8	1.0	0.1			Rotobeat & Interseed	1,000[b]		
Williams Creek	3.0	6.0			2.5	3.0	3.0	0.3			Rotobeat & Interseed	500[a]		
Seasonal:														
Briggs Canyon	4.5	9.0			6.0	7.2	2.0				Interseed Drill	1,500[a]		
Burnt Canyon									1.0	0.5			1.0	1.0
Cedar Point	1.5	3.0												
Eight Mile Canyon														
Kyle Canyon														
Sawmill					2.5	3.0	4.0	0.4	1.0	0.5				
Summit					1.5	1.8								
TOTALS	93.3	186.6	3.0	1.5	72.5	87.0	45.0	3.9	6.0	3.0		23,000	1.0	1.0

a. New Land Treatment
b. Maintain Existing Treatment
c. Includes 2,000 acres of maintaining existing treatment and 5,000 acres of new land treatment
d. Includes 1,500 acres of maintaining existing treatment and 3,000 acres of new land treatment

*includes 22 miles of Wet Creek protective fence
*includes 1 mile of Squaw Springs protective fence

TABLE 1-9

DEVELOPMENT AND MAINTENANCE COSTS

ITEM	QUANTITY	ESTIMATE UNIT COSTS	TOTAL	MAINTENANCE COSTS	ESTIMATED LIFE OF PROJECTS (YEARS)	TOTAL
Fences	93.3 miles	$2,500/mi	$233,250	$7,430/year	20+	$381,850
Spring Development	3.0	$1,500	$4,500	$300/year	20+	$7,500
Water Pipeline	72.5	$1,300/mi	$94,250	$14,400/year	20+	$382,250
Water Troughs	45.0	$600	$27,000	$2,100/year	20+	$69,000
Earthen Reservoirs	6.0	$6,000	$36,000	$300/year	20+	$42,000
Storage Tanks	1.0	$2,000	$2,000	$50/year	20+	$3,000
Vegetative Manipulation	23,000.0 acres	$15/acre	$345,000			$345,000
Totals			$742,000	$24,580		$1,230,600

Plowing, barring, and rotobeating would be done by BLM personnel, while spraying of vegetation would be contracted to private businesses.

4. Pipelines - The proposal would require 72.5 miles of water pipeline to provide adequate livestock and wildlife waterers. For pipeline installations, no right-of-way clearing or road construction would be permitted. An estimated 87 acres of surface disturbance would occur during construction of the proposed pipeline.

5. Reservoirs - Six earthen reservoirs are proposed. Fill material would come from below the high water line. If necessary the reservoir storage area would be sealed to prevent seepage. Approximately 3.0 acres of ground surface would be disturbed during construction of the reservoirs.

6. Vegetation Manipulation - Brush composition would be altered on 23,000 acres. Manipulation methods would include burning (7,000 acres), roto-beating (10,500 acres) and interseeding (5,500 acres). (Interseeding consists of introducing understory production by dragging a rangeland drill over the range in a manner that would minimize disturbance to brush and thus simultaneoulsy maintain maximum overstory production).

Of the 23,000 acres of vegetation manipulation, 4,500 acres would be maintenance of existing seedings (2,000 acres by burning and 2,500 acres by rotobeating); and 18,500 acres would be new treatment areas (5,000 acres by burning, 8,000 acres by rotobeating, and 5,500 acres by interseeding). Standard features for brush control projects are: treated areas would be rested from grazing for two growing seasons; edges of the treated areas would be irregular and would conform to the surrounding terrain; untreated strips about 200 feet wide would be left along each side of roads; major drainages would not be treated; no riparian areas would be included; and burning would be coordinated with the State Fire Weather Official to insure smoke dispersion.

Rest rotation grazing systems would be scheduled to allow the prescribed two seasons of rest for the treated areas of Pass Creek, Spring Canyon, and Jumpoff allotments. In allotments where existing seedings would be rehabilitated, rest from grazing would not be required for seedling establishment.

Sheep on Howe Peak allotment would be herded away from burned areas for two growing seasons. The 1,500 acres of seeding in the Briggs Canyon allotment are presently separated from the rest of the allotment by the Little Lost River. Cattle would not be allowed in this area for two growing seasons. Williams Creek allotment would require a temporary fence to rest 500 acres of reseeding because the treatment includes two pastures from a 3 pasture rest rotation system.

As a result of the vegetation manipulation, available AUMs on 5 allotments would be increased after 5 years. These additional AUMs would be used to reinstate stocking rates as shown below.

Allotment	Initial Adjustments AUMs	Adjustments Due To Vegetation Manipulation 1985	Additional AUMs Available After 15 Years
Spring Canyon	-889	+647	+242
Jumpoff	-198	+198	0
Pass Creek	-900	+638	+262
Warm Springs	-356	+125	+231
Williams Creek	-164	+ 75	+ 89

Maintenance

Repairs requiring reconstruction of an improvement would be done by BLM. Operational or preventative maintenance would be performed by the individuals holding the grazing licenses.

Costs

Approximately 44 work months would be needed to prepare the 23 AMPs for this proposal. In addition, approximately 100 work months would be needed to construct, administer, and supervise the developments shown in Table 1-3. Assuming $1,500 per work month, the total personnel cost would be $216,000. Monitoring and supervision of established grazing systems would require approximately 1/2 work month per allotment annually.

Standard Operating Procedures

The following committed procedures will be used in constructing the proposed range improvements and vegetation manipulations:

1. Permanent roads or trails would not be constructed to project sites. Existing access and off-road vehicles would be used where needed.

2. After construction, disturbed areas would be revegetated.

3. All refuse would be removed from work areas on federal lands and disposed of in an approved sanitary landfill.

4. A qualified archaeologist would survey all areas prior to any surface disturbance. If the archaeologist determines cultural values would be disturbed, construction would not proceed until action could be taken to protect those values.

5. No disturbance would be allowed on sites identified as potentially eligible for nomination to the National Register of Historic Places.

6. A qualified botanist would intensively survey all areas to be disturbed for Federally proposed and listed endangered and threatened plant species and for State listed species. Those areas in which no disturbance would be permitted due to threats to listed species would be designated.

7. Areas to be cleared for construction of range projects would be restricted to the minimum.

8. No disturbance or construction within possible BLM roadless areas would be allowed until a wilderness review is completed or it is determined that the activity would not impair the area's suitability for designation as a wilderness.

9. Sagebrush control would be done in irregular patterns to maximize edge effect.

10. An endangered and threatened animal clearance would be required before construction could be started. If the improvements would lessen the value of the habitat for a threatened or endangered species, after formal consultation with the Fish and Wildlife Service under Section 7 of the Endangered Species Act has been initiated, the project would be modified, relocated, or abandoned.

11. Partial control on brush by roto-beating would insure survival of young sagebrush. Ten to twenty percent composition of brush species would be retained to allow regrowth and restore sagebrush forage and cover for wildlife in 10 to 15 years.

12. Islands and drainages would be left in native vegetation on all sagebrush control treatments. No vegetation manipulation would take place on riparian areas. Ten percent of the total area proposed for each treatment would be retained for wildlife cover and forage during regrowth of young brush plants.

13. A mixture of adapted forb species would be used with Fairway strain crested wheatgrass to provide a diversity of vegetation for wildlife habitat requirements.

14. A raptor inventory will be conducted of areas proposed for vegetation manipulation to identify and flag active nests to insure they are not disturbed by the proposed manipulations.

15. No control of sagebrush would be done when sagebrush cover is less than 20 percent or on slopes greater than 20 percent.

16. Sagebrush control would not be done within 1/2 mile of sage grouse strutting grounds.

17. Let-down fences would be constructed in antelope wintering areas.

18. New or expanded grazing use and supporting facilities will be regulated so that they do not impair the suitability of the area for wilderness preservation. At such time as wilderness inventories have been completed and wilderness study areas are identified, this regulation will apply only to Wilderness Study Areas.

19. When implementing rest rotation grazing systems where the general condition of the allotment is less than good condition, the stocking rate for the first year of grazing would not be greater than the grazing capacity of the portion of the allotment grazed.

20. Design of range improvement projects and vegetative manipulations would be done by an interdisciplinary team to insure maximum multiple use benefits.

Monitoring Programs

Resource monitoring would be necessary to document changes occurring as a result of implementing the proposed action. Monitoring programs would be initiated during the first phases of implementation. Items or parameters to be monitored and the timing of that monitoring is discussed under each category that follows:

(Grazing Management Evaluation) - BLM would ensure compliance with the grazing system and monitor the impacts of the system. In accordance with 43 CFR 4100, grazing privileges would be reduced to the carrying capacity for as long as necessary when the range is depleted from drought or other causes. A drought condition would exist if precipitation is 50 percent below the annual average.

Studies and evaluation procedures discussed below would be conducted annually on the grazing management program in accordance with BLM Manual Section 4412 to determine if the MFP and specific objectives are being met. These studies typically include compilation of actual use, range trend, range/watershed condition, utilization, weather data, carrying capacity, and wildlife habitat monitoring. Periodic visual checks would also be conducted on the allotments under limited (area-wide grazing) management. Where specific objectives are not met, adjustments in season of use, livestock numbers (including removal) or the entire grazing system would be made depending on indicated need. An Environmental Assessment would be prepared prior to initiating any substantial change in grazing.

Trespass - BLM would issue licenses in accordance with the grazing regulations (43 CFR 4100) for grazing livestock on each allotment within the framework of the grazing system. The grazing license would specify the grazing area, livestock numbers and class, and season of use and AUMs to which the license is entitled. BLM employees would make routine allotment inspections seasonally to ensure that livestock numbers and time of grazing for each pasture comply with that authorized by the license. BLM would control livestock trespass in accordance with the grazing regulations (43 CFR 4150).

Threatened or Endangered (TE) Wildlife - Monitoring of T & E wildlife in the ES area would consist of reporting field observations by BLM personnel in the field annually to the district T & E coordinator to determine habitat use areas. No program is designed to monitor population trends as T & E wildlife are migratory in the ES area, and resident populations are undocumented.

Threatened or Endangered (TE) Plants - A system of monitoring, either independently or in conjunction with other continuing range studies done on an annual basis, would be initiated to determine trends in populations of endangered or threatened plant species.

Water Quality and Aquatic Life - Combined water quality studies in cooperation with the USGS would be conducted annually to measure temperature, oxygen, hardness, phosphates, flow, etc. Fish habitat monitoring studies would occur annually and would determine bank cover and stability, pool classes, bottom material, turbidy, fish populations, etc. In addition, these studies would include protective exclosures which would be used to document changes due to implementation of the proposed grazing systems. These studies would also provide a basis for changing management of livestock if objectives for water quality and fish habitat are not met.

After studies are completed, appropriate adjustments in the management of livestock grazing would be made to mitigate adverse impacts.

Wildlife - Habitat condition and trend studies would be conducted annually on crucial big game wintering ranges to determine the effects of the grazing systems on these ranges. Annual studies would also be performed to better identify the actual use areas of each big game species in wintering, fawning, or calving areas. Efforts would be made on an annual basis to more clearly identify any sage grouse strutting, nesting and wintering areas and the effects of grazing systems on the sage grouse populations.

IMPLEMENTATION SCHEDULE

Table 1-10 shows the implementation schedule for making livestock adjustments, initiating management systems, and carrying out range improvements and vegetation manipulations.

TABLE 1-10

IMPLEMENTATION SCHEDULE

PROPOSED ACTION	YEAR 1980	1981	1982	1983
Livestock Adjustments Initiation of Management Systems - Rest Rotation (Allotment)	Livestock Adjustments on all Allotments	Pass Creek Uncle Ike Warm Spring Williams Creek	Jumpoff	Hawley Mtn. Spring Cyn.
Deferred Rotation		Bear Canyon Howe Peak Mahogany Pk.	Bell Mt. Cedarville Horse Ck. Wet Creek	Bernice Sinks Wigwam Butte
Seasonal		Burnt Cyn. Eight Mile Kyle Cyn. Summit	Briggs Sawmill Cedar Point	
Range Improvements				
Fences		62.3 mi.	31.0 mi.	
Spring Development	3.0			
Water Pipelines	72.5 mi.			
Water Troughs	45.0			
Reservoirs	6.0			
Vegetative Manipulations			11,500 ac.	11,500 ac.
Storage Tanks	1.0			

EVOLUTION OF THE PROPOSAL

The Little Lost-Birch Creek planning process began with an identification of major problems and data needs. Existing resources and their present and potential uses were inventoried and described in the Unit Resource Analysis (URA). Possible resource uses were suggested by BLM specialists and by informed groups and individuals. Recommendations and objectives were then developed within the constraints of law, departmental regulations, and policies formulated by public officials. Those recommendations and objectives were then presented to the public for review.

An interdisciplinary team analyzed the single use Management Framework Plan (MFP-1) recommendations, the conflicts among them, and the comments received from the public before the multiple-use recommendations were made in MFP-2.

Table 1-11 summarizes the Little Lost-Birch Creek range management recommendations from MFP-1, resource conflicts identified in the planning system which arose from those recommendations, the multiple use (MFP 2) recommendations, and the rationale for making those multiple-use recommendations.

D. INTERRELATIONSHIPS WITH OTHER FEDERAL, STATE, AND PRIVATE GRAZING PROGRAMS, PLANS, AND POLICIES

Other federal and state agencies which could be affected by the proposed action are the U.S. Forest Service (USFS); the Department of Energy (DOE); U.S. Fish & Wildlife Service (USFWS); BLM Salmon District; the Idaho Department of Public Lands (IDPL); Idaho Department of Water Resources (IDWR); and the Idaho Department of Fish and Game (IDFG). Other agencies requiring contact and coordination are the Heritage Conservation & Recreation Service, the National Park Service, the State Historic Preservation Officer and the State Parks and Recreation Department. Private land ownership is also related and contact and coordination with grazing associations, as well as operators who are not in associations, is important.

Forest Service - Thirty ranch operations which use the planning unit during the spring and fall also use either the Challis or Targhee National Forest during the summer. Grazing use on these BLM allotments during existing seasons and at present stocking rates is important to the ranchers' year-long operations.

Grazing on the Challis National Forest is managed by the Mackay Ranger District and on the Targhee by the Dubois Ranger District. Although the Idaho Falls District has no formal management agreements with either the Targhee or the Challis National Forest, BLM personnel have met several times with Forest Service representatives from the Mackay and Dubois Ranger Districts to coordinate on the proposed action. BLM and Forest service personnel have agreed to maintain periodic, informal contacts on the proposal.

Close coordination would be necessary on range improvements (particularly water developments) and grazing management systems. Many potential water sources for BLM allotments originate on Forest Service lands, and Forest Service personnel have indicated a willingness to cooperate on developing those water sources.

TABLE 1-11

DEVELOPMENT OF THE PROPOSAL IN MFP STEPS 1 AND 2

MFP-1 RECOMMENDATION	OTHER MFP-1 RESOURCE MANAGEMENT RECOMMENDATIONS WHICH CONFLICT	MULTIPLE-USE RECOMMENDATIONS (MFP-2)	RESOURCE TRADE OFFS	RATIONALE FOR THE MULTIPLE-USE RECOMMENDATIONS
Livestock Grazing:				
1. Implement rest-rotation grazing systems on 7 allotments with 181,232 acres of Public Land. 14,162 AUMs are allocated to livestock.		1. Implement rest-rotation grazing systems on 7 allotments with 181,232 acres of Public Land. 11,678 AUMs are allocated to livestock.	Livestock AUMs would have to be reduced in order to provide adequate forage for the elk, mule deer and antelope.	Fifty four percent of the Public Land in these allotments is in fair or poor condition. Management objectives are to improve the condition on the poor and fair areas and to maintain or improve the condition of the good areas. Rest-rotation is a very comprehensive and closely prescribed grazing system which would best meet the needs of these allotments. The rest-rotation grazing systems would be designed to improve vigor and provide for reproduction of important forage species. The grazing systems would be designed to meet the physiological needs of the plant communities. In addition, improved livestock distribution would result from water development and implementation of management systems. Livestock concentrations along streams would also be reduced. Wildlife Management objectives are to maintain present populations on antelope and elk and to allow slight increases in deer populations. Reduction in livestock AUMs is necessary to accommodate this objective. Recreation (hunting) provides a sizeable contribution to the local economy.
Allotments: Hawley Mountain Jumpoff Pass Creek Spring Canyon Uncle Ike Warm Springs Williams Creek	Provide forage for elk, mule deer and antelope.	Provide forage for elk, mule deer and antelope.		
	Do not exceed 50% utilization of any livestock forage species to protect forage and cover for upland game and non-game.	Utilization will exceed 50% during the grazing treatment.	Habitat requirements for upland game and non-game would not be met on the grazed area.	The rested areas would provide improved habitat for upland game and non-game which would help reduce the habitat requirement loss for upland game and non-game on the grazed area.
	Do not exceed 50% utilization of Key livestock forage species before June 15.	Do not exceed 50% utilization if key livestock forage species before June 15.	Some seasonal adjustments in livestock grazing would be necessary to accommodate this recommendation.	This recommendation would help attain the wildlife population objectives with minimal effects on seasonal adjustments in livestock grazing.

TABLE 1-11 (continued)

DEVELOPMENT OF THE PROPOSAL IN MFP STEPS 1 AND 2

MFP-1 RECOMMENDATION	OTHER MFP-1 RESOURCE MANAGEMENT RECOMMENDATIONS WHICH CONFLICT	MULTIPLE-USE RECOMMENDATIONS (MFP-2)	RESOURCE TRADE OFFS	RATIONALE FOR THE MULTIPLE-USE RECOMMENDATIONS
	Allow no livestock grazing on critical deer and elk winter ranges after October 1.	Livestock grazing would continue on deer and elk winter ranges after Oct. 1, but adequate forage would be allocated for both livestock and big game based on proper use factors and dietary preference. Fecal analysis studies are continuing to determine dietary overlap which may alter recommendations.	Some behavioral competition would still exist after Oct. 1 on Hawley Mt, Jumpoff, Spring Canyon, Uncle Ike, and Warm Springs allotments as a result of both deer and livestock being in the same area.	Forage would be provided for the big game species.
	Do not allow livestock grazing on 3½ miles of Deer Creek before September 1 in order to protect the riparian habitat and the quality of the fisheries.	Do not allow livestock grazing on Deer Creek before September 1.	There are no resource trade offs because livestock presently graze after September 1 along Deer Creek.	By grazing after September 1, the riparian habitat would not be affected and the fisheries would remain in a good condition.
2. Implement deferred rotation grazing systems on 10 allotments with 118,210 acres of Public Land and 65,673 acres of Withdrawn Lands. 13,611 AUMs are allocated to livestock. Allotments: Bear Canyon Bell Mountain Bernice Cedarville Horse Creek Howe Peak Mahogany Butte Sinks Wet Creek Wigwam Butte	Provide forage for elk, mule deer and antelope.	2. Implement deferred rotation grazing systems on 10 allotments with 118,210 acres of Public Land and 65,673 acres of Withdrawn Lands. 13,249 AUMs are allocated to livestock. Provide forage for elk, mule deer and antelope.	Livestock AUMs would have to be reduced in order to provide adequate forage for the elk, mule deer and antelope This would have an adverse impact on the operators by reducing their annual income.	These allotments are primarily in good and fair condition or have a stable or upward trend. In addition, two allotments, Howe Peak and Mahogany Butte, are grazed by sheep. Management flexibility is greater on sheep allotments due to a full time herder present to move sheep as needed. Deferred rotation grazing systems are recommended due to the present pasture division, small size of the allotments or split season of use. Under deferred rotation, a portion of the allotment is deferred from grazing until after seed ripe. This allows for periodic spring rest and seed trampling which will restore plant vigor and establish seedlings. This will assure that the allotments will be maintained or improved in range condition at a satisfactory rate. In addition, improved livestock distribution would result from water developments and implementation of management systems. Livestock concentrations along streams would also be reduced.

TABLE 1-11 (continued)

DEVELOPMENT OF THE PROPOSAL IN MFP STEPS 1 AND 2

MFP-1 RECOMMENDATION	OTHER MFP-1 RESOURCE MANAGEMENT RECOMMENDATIONS WHICH CONFLICT	MULTIPLE-USE RECOMMENDATIONS (MFP-2)	RESOURCE TRADE OFFS	RATIONALE FOR THE MULTIPLE-USE RECOMMENDATIONS
				Wildlife management objectives are to maintain present populations on antelope and elk and to allow slight increase in deer populations. The reduction in livestock AUMs is necessary to accommodate this objective. Recreation (hunting) provides a sizeable contribution to the local economy.
	Allow no livestock grazing on critical deer and elk winter ranges after October 1.	Livestock grazing would continue on deer and elk winter ranges after Oct. 1, but adequate forage would be allocated for both livestock and big game based on proper use factors and dietary preference. Fecal analysis studies are continuing to determine dietary overlap which may alter recommendations.	Some behavioral competition may still exist after Oct. on Bear Cyn, Bell Mtn, Bernice, Cedarville, and Howe Peak allotments as a result of both deer and livestock in the same area.	Forage would be provided for the big game species.
	Avoid sheep concentration on antelope migration routes.	Avoid sheep concentrations on antelope migration routes.	None.	
3. Implement a seasonal grazing system on 7 allotments with 33,128 acres of Public Land. 2,091 AUMs are allocated to livestock. (Proposed livestock use on Federal Lands exceeds existing stocking rates on these allotments. This resulted from redistribution of livestock use between allotments where the same permittee has a shortage for forage in one allotment and a forage surplus in another. Stocking levels will not exceed carrying capacity on any allotment.)		3. Implement a seasonal grazing system on 7 allotments with 33,128 acres of Public Land. 2,237 AUMs are allocated to livestock.		Briggs Canyon, Burnt Canyon, Cedar Point, Sawmill and Summit allotments are all in good condition, and seasonal grazing systems will be adequate to maintain or improve that good condition. Eight Mile Canyon and Kyle Canyon are too small to be effectively managed under some type of rotation system.
	Provide forage for mule deer and antelope.	Provide forage for mule deer and antelope.	None.	

Allotments:

Briggs Canyon
Burnt Canyon
Cedar Point
Eight Mile Canyon
Kyle Canyon
Sawmill
Summit

TABLE 1-11 (continued)

DEVELOPMENT OF THE PROPOSAL IN MFP STEP 1 AND 2

MFP-1 RECOMMENDATION	OTHER MFP-1 RESOURCE MANAGEMENT RECOMMENDATIONS WHICH CONFLICT	MULTIPLE-USE RECOMMENDATIONS (MFP-2)	RESOURCE TRADE OFFS	RATIONALE FOR THE MULTIPLE-USE RECOMMENDATIONS
	Allow no livestock grazing on critical deer and elk winter ranges after October 1.	Livestock grazing would continue on deer and elk winter ranges after Oct. 1, but adequate forage would be allocated for both livestock and big game based on proper use factors and dietary preferences. Fecal analysis studies are continuing to determine dietary overlap which may alter recommendations.	Some behavioral competition may still exist after October 1 as a result of deer and livestock grazing the same area on Briggs and Burnt Canyon, Cedar Point, and Eight Mile Cyn. allotments.	Forage would be provided for the big game species.
4. Develop management facilities and complete vegetation manipulation to maintain stocking levels and develop grazing systems. a. 93.3 miles of fence b. 3 spring developments c. 72.5 miles of pipeline d. 45 water troughs e. 1 water tank f. 6 earthen reservoirs g. Initiate brush control and seedings on 80,000 acres new treatment and 5,500 acres of existing seedings which are reverting to brush.	Do not control sagebrush or plant grass on extensive acreages in deer and antelope winter ranges.	4. Develop range projects and complete vegetation manipulation to maintain stocking levels and develop grazing systems. a. 93.3 miles of fence b. 3 spring developments c. 72.5 miles of pipeline d. 45 water troughs e. 1 water tank f. 6 earthen reservoirs g. Initiate brush control and seedings on 18,500 acres new treatment and 4,500 acres of existing seedings which are reverting to brush.	Do not initiate brush control on 71,500 acres (new) 1,000 acres (existing).	Areas scheduled for vegetation manipulation are currently dominated by big sagebrush (72% to 95% of the vegetative composition) with grass understories of less than 5%. This situation is not desirable for livestock or watershed, and these areas are in poor ecological site condition. Vegetative manipulations will increase livestock forage production and improve species diversity, thereby minimizing the impact of livestock in the remainder of the area. The management facilities proposed are necessary to implement the rest-rotation and deferred rotation management system. This would help alleviate impacts on stream banks, improve livestock distribution, compensate for lack of water, reduce concentration areas and help improve areas in fair and poor range condition. Sagebrush control and grass seeding is needed on areas of poor ecological site condition in some allotments to achieve the goals of the grazing management system. Improved vegetative condition over the allotment would also benefit antelope. Prohibitive costs and adverse impacts to big game winter range precluded the brush control on the total 95,500 acres.

TABLE 1-11 (continued)

DEVELOPMENT OF THE PROPOSAL IN MFP STEPS 1 AND 2

MFP-1 RECOMMENDATION	OTHER MFP-1 RESOURCE MANAGEMENT RECOMMENDATIONS WHICH CONFLICT	MULTIPLE-USE RECOMMENDATIONS (MFP-2)	RESOURCE TRADE OFFS	RATIONALE FOR THE MULTIPLE-USE RECOMMENDATIONS
	Include native species, forbs, and legumes in seed mixture on all vegetative manipulations.	A mixture of introduced species of grasses, legumes and forbs would be used on all vegetative manipulations.	Lack of species diversity will make the seedings somewhat less desirable to big game.	Native species have low seed viability and low plant vigor so they are difficult to get established in seedings.
5. Change the class of livestock from sheep to cattle on the following allotments: Briggs Canyon, AEC East of Howe (Sinks), Bernice, AEC Kyle Canyon, Deer Creek, Hawley Mountain, Pass Creek, Sawmill, and Wigwam Butte.	None.	5. Change the class of livestock from sheep to cattle on the following allotments: Briggs Canyon, AEC East of Howe (Sinks), AEC Kyle Canyon, Deer Creek, Bernice, Hawley Mountain, Pass Creek, Sawmill, and Wigwam Butte.	None.	Vegetation inventory and dietary information indicate that there are no problems with change of class of livestock from sheep to cattle provided that dietary preferences of the livestock are considered when determining the conversion rate.
6. Combine the following allotments: *Bear Canyon and Mays *Bell Mountain and Scott *Hawley Mountain and Deer Creek *Horse Creek and Clyde *Jumpoff and Hansen Pass *Wet Creek and Clyde School *Wigwam Butte and AEC Kyle Canyon *Denotes name of combined allotments.		6. Combine the following allotments: *Bear Canyon and Mays *Bell Mountain and Scott *Hawley Mountain and Deer Creek *Horse Creek and Clyde *Jumpoff and Hansen Pass *Wet Creek and Clyde School *Wigwam Butte and AEC Kyle Canyon	None.	In all cases, these combinations are grazed by the same ranch operation. The proposal for combining is to aid in streamlining administrative procedures in licensing and record keeping and for ease in operation for the livestock user by combining small allotments into larger, more manageable units.
Wildlife (Aquatic):				
1. Fence 11 miles of Wet Creek to exclude livestock grazing to protect riparian habitat. Total acreages involved is 133 acres.		Fence 11 miles of Wet Creek to exclude livestock grazing to protect riparian habitat.	This would be a loss of 66 AUMs, however, no reductions are planned in this allotment. So no resource trade offs exists.	Fencing of this section of Wet Creek would reduce stream bank erosion. This in turn would improve the fisheries habitat on this segment.
2. Exclude livestock from 5 miles of Big Springs Creek to protect fisheries.		Livestock use would be restricted on Big Spring Creek by not allowing grazing until after September 1. In addition livestock would be excluded from the water gaps, but pipelines and troughs would be installed to supply water.	Livestock would not be able to use the water gaps.	Aquatic habitat would be protected and livestock would still be supplied with water.
3. Fence 1 mile of Squaw Creek to protect riparian habitat.	None.	Fence 1 mile of Squaw Creek to protect riparian habitat.	None.	By fencing Squaw Creek the riparian habitat would remain in good condition.

TABLE 1-11 (continued)

DEVELOPMENT OF THE PROPOSAL IN MFP STEPS 1 AND 2

MFP-1 RECOMMENDATION	OTHER MFP-1 RESOURCE MANAGEMENT RECOMMENDATIONS WHICH CONFLICT	MULTIPLE-USE RECOMMENDATIONS (MFP-2)	RESOURCE TRADE OFFS	RATIONALE FOR THE MULTIPLE-USE RECOMMENDATIONS
Close all streams to livestock grazing.	Supply livestock water for 29,864 livestock AUMs.	Protect approximately 23 miles of riparian vegetation by fencing and restricted grazing.	As a result of protecting 23 miles of riparian habitat some livestock watering sources would be lost.	The 23 miles to be protected provides for both fisheries habitat and recreational use.
4. Eliminate livestock from the Birch Creek water gaps.	Provide water for livestock along the Birch Creek.	Livestock would not be excluded from the Birch Creek water gaps.	Total protection of aquatic habitat in Birch Creek.	By constructing a pipeline and providing watering troughs livestock distribution would be improved and the water gaps would not be utilized as much. In addition the rest-rotation system planned for this area would also increase livestock distribution and reduce the impacts at the water gaps.
Wildlife (Terrestrial):				
1. Provide forage for the following big game species: a. Antelope 6,786 AUMs b. Deer 2,490 AUMs c. Elk 1,177 AUMs	Authorize use of 29,864 AUMs for livestock grazing	I. Provide forage for the following big game species: a. Antelope 6,786 AUMs b. Deer 2,490 AUMs c. Elk 1,177 AUMs	Livestock AUMs would be reduced to provide forage for big game species.	Wildlife management objectives are to maintain present populations on antelope and elk and to allow slight increases in deer populations. The reduction in livestock AUMs is necessary to accomodate this objective. Recreation (hunting) provides a sizeable contribution to the local economy.
Watershed:				
1. Do not graze more than 50 percent of the current years production of forage plants used by livestock and wildlife.	None.	1. Do not graze more than 50 percent of the current years production of forage plants used by livestock and wildlife on an allotment basis.	None.	In order to maintain present vegetation cover for watershed protection.
Recreation:				
1. Fence Birch Creek to exclude livestock from recreation areas.	Utilize Birch Creek as a watering source for livestock.	1. Fence recreation areas to protect them from livestock.	None.	By fencing recreation areas livestock could still utilize Birch Creek as a watering source, but they would be excluded from recreation areas.

A Memorandum of Understanding between the BLM Idaho Falls District and the Challis National Forest has been drafted and is currently being reviewed. Establishing a formal Memorandum of Understanding would facilitate cooperative efforts on range improvements and grazing systems.

The Williams Creek AMP was developed with Forest Service input because that allotment adjoins Forest Service land. The water source for the Williams Creek pipeline is on Forest Service land, and the water is piped onto the BLM allotment.

U.S. Fish & Wildlife Service - The USFWS is responsible for predator control in the unit. The affects of predators on big game numbers are currently unknown, but predators do limit sheep operations. Significant sheep losses to predators account for part of the reason that some operators are requesting class changes from sheep to cattle.

The University of Idaho conducted an inventory of threatened and endangered plants in the planning unit during the summer of 1978. FWS formally reviewed the results of the inventory on 8-28-78 and no impacts are anticipated.

The District wildlife biologist consulted with FWS on threatened and endangered animals in the unit on 9-21-78. The FWS representative indicated that no formal consultation would be necessary under Sec. 7 of the Endangered Species Act because no significant impacts to threatened or endangered species were anticipated.

Dept. of Energy - The Howe Peak, Mahogany Butte and Wigwam Butte allotments include both BLM and withdrawn (DOE) lands. The Sinks allotment contains only withdrawn (DOE) lands. Livestock grazing on all of these allotments is managed by the BLM under a Memorandum of Understanding between the BLM and the DOE (formerly the Atomic Energy Commission) dated April 5, 1950.

Sub-paragraph 4.6 of that Memorandum states:

> "The Bureau of Land Management, subject to this agreement, agrees to administer the area in accordance with the provisions of the Federal Range Code, and to assume full responsibility for the conduct of range improvement and rehabilitation programs, the administration of grazing, supervision of use of the range, and the collection of any and all claims for grazing trespass committed on the effected areas."

The BLM has almost total independence for administration of grazing on these lands. However, permits can be issued on an annual basis only, and the DOE has the option to amend or cancel a permit at anytime. The DOE also reserves the right to amend the area open to grazing at any time.

Other Agencies - The District Archaeologist has coordinated the cultural resource management program with other Federal, State and local agencies as it relates to the proposal. The State Historical Preservation Officer (SHPO) was consulted about the impact of the proposed action on sites listed on the National Register of Historic Places and sites included in the state historical preservation plan. The SHPO will routinely review and comment on all district initiated archaeological and historic sites inventories as well as all draft environmental statements.

The National Register of Historic Places was reviewed to determine the number of National Register properties in the ES area. The Birch Creek Rockshelters located in the vicinity of Blue Dome, Idaho is the only site currently listed. The State Coordinated Outdoor Recreation Plan (SCORP) compiled by the Idaho State Parks and Recreation Department concerning the existence of natural landmarks, national historic trails, archeological and historic sites was also consulted.

The District has been in contact with the Forest Service and the National Park Service regarding the Nez Perce Trail. A feasibility study for adding the Nez Perce (Nee-Mee-Poo) Trail to the National Trails System has been initiated as a joint effort by the Departments of Interior and Agriculture. The study will be conducted under the leadership of the Forest Service, Northern Region, located in Missoula Montana. One segment of the Nez Perce Trail runs through the Birch Creek Valley in the ES area. The trail route, as presently designated, follows the existing highway right-of-way. The District will continue to coordinate with the FS and the NPS on the Nez Perce Trail study.

Salmon District - Boundary allotment (1,667 acres) is located at the north end of the Birch Creek Valley and is administered by the BLM Salmon District. Boundary allotment will be covered in an environmental statement to be prepared by the Salmon District on the Gilmore planning unit. The permittee on the Boundary allotment runs the major portion of his operation in the Salmon District. This arrangement has been confirmed with the Area Manager of the Gilmore planning unit.

Idaho Dept. of Public Lands - The IDPL manages state-owned parcels of land which are intermixed with federal and private lands in the planning unit. Most of this land is leased by grazing permittees in conjunction with their federal permits. Any change in grazing management on BLM allotments which contain state land could affect state land management. Permittees sometimes enter into agreements with BLM which stipulate that unfenced state land will be managed in the same manner as the adjacent BLM property. In such cases, IDPL becomes a cooperating agency in developing AMPs, adjusting stocking rates, and making any major changes in grazing management. The Idaho Falls District has no official agreements with IDPL, but informal consultation has been carried out on proposed stocking rates, grazing systems, changes in allotment boundaries and changes in class.

Idaho Dept. of Fish & Game - Game animals in the area are managed by the IDFG, while BLM manages the habitat. BLM and IDFG exercised close coordination in developing the inventory information and the proposal.

Wildlife needs have been incorporated in the proposed range improvements and vegetation treatments. Game population statistics used in this statement were provided by IDFG, and the proposed forage allocation is based on existing populations of antelope and elk and for deer population increases of 25% in Birch Creek Valley and 10% in Little Lost Valley.

Idaho Dept. of Water Resources - The IDWR controls the allocation of water resources for all state and private land within the planning unit, and most water rights are owned by private individuals in the area. Any proposed range improvements involving water developments would have to be coordinated with the owner of the water rights and with IDWR to determine legal requirements during the detailed planning stage.

Private Lands - Private lands along the drainage bottoms are used primarily to produce forage crops to sustain livestock operations through winter months. These properties are also the land to which federal grazing privileges are attached. Most of the ranchers are dependent upon additional federal or state forage to sustain year-long livestock operations. Proposed adjustments in season of use could have serious implications for the economic feasibility of the ranching operations by increasing the period of supplemental feeding and thus increasing operating costs. Private lands can also be offered for Exchange of Use Agreements.

Operators & Grazing Associations - BLM representatives have maintained regular contact with the livestock operators in the ES area throughout the inventory stages and development of the proposal. The relationship of the ranchers' overall operations to their BLM grazing privileges is a significant consideration in making adjustments in stocking rates, class and seasons. (For further detail see Chapter 9 discussion on History of Public Involvement Efforts).

Two grazing associations operate in the ES area. They are the Ramshorn Grazing Association and the Clyde Grazing Association. BLM, SCS, and FS representatives meet annually with these associations during their regular spring association meetings. BLM representatives have also met with representatives of these associations specifically in developing the proposal.

Some operators in the ES area are members of the Tri-County Cattlemen's Association, which includes operators from Custer, Lemhi and Butte counties. Representatives of Tri-County Cattlemen's Association have participated in several of the tours and meetings conducted by the District in developing the proposal.

CHAPTER 2
DESCRIPTION OF THE ENVIRONMENT

CHAPTER 2

DESCRIPTION OF THE EXISTING ENVIRONMENT

INTRODUCTION

The description of the existing environment covers the following resources and land uses; climate, topography, soils, vegetation, livestock grazing, socio-economics, terrestrial wildlife, aquatic wildlife, water, recreation, visual, cultural, wilderness, minerals, air quality, erosion, and paleontology. The degree of detail in the description of each resource or land use relates directly to the degree of anticipated impacts. The last section of the chapter describes the anticipated future environment if the proposed action is not implemented.

CLIMATE

The Little Lost/Birch Creek ES area has a semi-arid climate so the potential evaporation and transpiration from soil and vegetation exceeds the average annual precipitation.

Long term climatic records are available from Howe, Idaho and from the DOE site, 3 miles southeast of the Birch Creek Valley.

Precipitation

The records at Howe indicate that mean annual precipitation ranges from 6.4 to 10.5 inches with the average being 8.7. April, May, and June are the peak precipitation months. The lowest annual precipitation recorded at Howe was 4.47 inches. Generally, the northern part of the ES area receives more precipitation than the southern part because of higher elevation. Snowfall commonly occurs from November through April and averages 26 inches at the DOE site.

Temperatures

Temperatures of the area vary widely. The average annual temperature at Howe is 44 degrees, but temperatures range from 102° F. in the summer to -30° F. in the winter.

Frost-free periods around the ES area average about 105 days. However, the frost-free period has been as low as 69 days and as high as 154 days. For the last 13 years the average frost-free period has been from June 2 to September 14.

TOPOGRAPHY

The Little Lost/Birch Creek ES area lies within the northern Rocky Mountain Region of southeast Idaho. The area consists of north-westerly trending alluvial filled troughs. Elevation ranges from 4,778 feet at the Lost River Sinks to 9,752 feet on Hawley Mountain, with an average elevation of about 6,000 feet. Hawley Mountain has 30-60 percent slopes. The bench slopes are about 5 percent and the main valley slopes about 1 percent.

The area is covered with alluvial gravels with little exposed bedrock. The age of the rocks ranges from recent gravels to Precambrian quartzites.

VEGETATION

General Vegetation Types

Soils in the ES area were mapped in 1977 according to physical characteristics. This information, when coupled with precipitation data, was correlated with vegetation inventory information to arrive at ecological sites. For discussion purposes, similar ecological sites have been combined into general vegetation types.

The ES area has five major vegetation types: sagebrush, saltbrush, mountain shrub, woodland and meadow (See Figure 2-1). The meadow type is not shown on Figure 2-1 because it comprises less than .5 percent of the ES area. Each vegetation type is based upon differences in the proportions and kinds of native plant species that are predominant over an area. Plants commonly found in these five types are listed in Table 2-1.

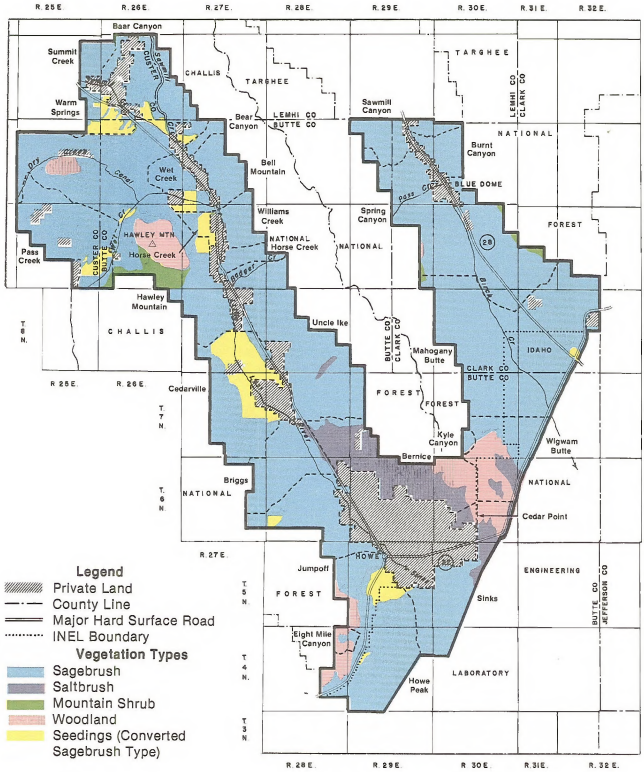
Sagebrush Type

The sagebrush type dominates 90 percent of the ES area (358,418 acres). The average species composition for the sagebrush type is 25 - 35 percent grass, 55-70 percent shrubs, and 3-8 percent forbs.

Big sagebrush is the most common species in the sagebrush type. Predominant species include black sagebrush, low sage, and threetip sage. The rabbit brush sub type is included in the sagebrush type and consists mainly of green rabbit brush and rubber rabbit brush.

In the sagebrush type, the majority of the forage for livestock is produced in the understory. The major understory grass species is blue bunch wheatgrass. Other important grasses are Indian ricegrass, bluegrass, and bottlebrush squirreltail.

Crested wheatgrass is an important component of the sagebrush type. Approximately 22,709 acres of sagebrush have been converted to crested wheatgrass production.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Baar Canyon
Summit Creek
Warm Springs
Big Lost River
CHALLIS
TARGHEE
Bear Canyon
LEMHI CO
BUTTE CO
Sawmill Canyon
LEMHI CO
CLARK CO
NATIONAL
Burnt Canyon
BLUE DOME
FOREST
Wet Creek
Bell Mountain
Willams Creek
NATIONAL
Horse Creek
Spring Canyon
Pass Creek
HAWLEY MTN.
Hawley Mountain
Uncle Ike
Mahogany Butte
IDAHO
CLARK CO
BUTTE CO
Cedarville
FOREST
Kyle Canyon
Wigwam Butte
Bernice
Briggs
NATIONAL
Cedar Point
HOWE
Jumpoff
FOREST
ENGINEERING
Sinks
BUTTE CO
JEFFERSON CO
Eight Mile Canyon
LABORATORY
Howe Peak
Legend
Private Land
County Line
Major Hard Surface Road
INEL Boundary
Vegetation Types
Sagebrush
Saltbrush
Mountain Shrub
Woodland
Seedings (Converted Sagebrush Type)

Figure 2-1

TABLE 2-1

PLANTS COMMONLY FOUND IN THE MAJOR VEGETATION TYPES

	Grass	Forbs	Shrubs
Sagebrush Type	Bluebunch Wheat grass Sod Wheatgrass Prairie June grass Indian ricegrass Bottlebrush squirreltail Nevada bluegrass Sand dropseed Idaho fescue Needle-and-threadgrass Carex spp Crested wheatgrass	Erigonum spp. Astragalus spp. Erigeron spp. Erysimum spp. Hoods phlox death camas phlox Indian paintbrush Sego lily Scarlet globemallow lupine arrowleaf balsam root daisy penstemon wild onion Tapertip hawksbeard Aster	Wyoming big sagebrush Mountain big sagebrush Black sagebrush Low sagebrush Threetip sagebrush gray low sagebrush Winterfat budsage green rabbitbrush prickly gilia grey horsebrush Shrubby eriogonum rubber rabbitbrush antelope bitterbrush chicken sage Shadscale saltbrush
Saltbrush Type	Indian ricegrass Needle-and threadgrass Sandberg bluegrass bluebunch wheatgrass Nevada bluegrass bottlebrush squirreltail Sand dropseed	erigeron Scarlet globemallow phlox Torrey cryptantha daisy Astragalus	Shadscale Saltbrush Nuttall's saltbrush Winterfat bud sagebrush chicken sage green rabbitbrush fringed sagebrush spring hop sage
Mountain Shrub Type	bluebunch wheatgrass needle-and-thread grass Indian ricegrass Sandberg bluegrass Idaho fescue prairie junegrass	arrowleaf balsam root lupine spp. lomatium spp. phlox rosy pussy toes	curlleaf mountain mahogany mountain big sagebrush Wyoming big sagebrush black sagebrush Antelope bitterbrush green rabbitbrush prickly gilia
Woodland Type	bluebunch wheatgrass basin wild rye Indian ricegrass Sandberg bluegrass	arrowleaf balsam root tapertip hawksbeard phlox Erigeron spp. Erysimum spp.	Douglas Fir Utah juniper dwarf goldenweed green rabbitbrush black sagebrush
Meadow Type	Wild rye mountain brome sedge Kentucky bluegrass sodwheat alkali sacaton	Rocky Mountain Iris geranium clover	willow woods rose rabbitbrush shrubby cinquefoil

Saltbrush Vegetation Type

The saltbrush type covers 6 percent of the ES area (23,895 acres). This type occurs in lower elevation broken foothills and along wind swept ridges and draw edges. Available moisture on these areas is extremely low. The average composition of this vegetation type is 25-35 percent grass, 60-75 percent shrubs and 5 percent forbs.

Mountain Shrub Type

The mountain shrub vegetation type makes up 2 percent (7,965 acres) of the ES area. The composition of this type averages 40 to 50 percent grass, 10 percent forbs and 35-45 percent shrubs and trees.

Woodland Vegetation Type

Woodland vegetation covers 1.5 percent (5,974 acres) of the ES area, and consists of two major types. The Douglas fir type found on high mountainous sites has little understory and furnishes very little forage. Juniper, the other woodland type, occurs on rocky foothills, ridges and breaks. The Juniper type has an understory of 15-20 percent grasses 3-5 percent forbs and 70-80 percent shrubs and tree composition by weight.

Meadow Vegetation Type

The meadow vegetation type makes up 0.5 percent (1,991 acres) of the ES area. The meadow type is made up mostly of semi-wet and dry meadows. Grass and grass like plants are the major components of the vegetation within meadow areas, with 80 percent of the composition by weight. Forbs comprise 15 percent while shrubs contribute 5 percent to the vegetation community in the meadow type.

Vegetation and Range

Forage Production

Forage production includes that portion of the total vegetation biomass that can be consumed by big game and livestock each year. The forage production on the ES area is estimated at 30,093,600 pounds or 37,617 AUMs. Table 2-2 lists forage produciton by allotment and Appendix 2-1 shows the methodology used to determine forage production. Appendix 2-2 contains the ecological site descriptions.

Suitability For Livestock Grazing

During the vegetation inventory, a suitability rating was given to all Public Lands in the ES area. The criteria used to determine suitability were slope, distance from water and forage production. Suitable range must have slopes of less than 50%, the distance from water must be two miles or less and forage production must be better than 32 acres per AUM.

TABLE 2-2

PRESENT AND FUTURE PRODUCTION OF TOTAL VEGETATION BIOMASS AND USEABLE FORAGE

Allotment	Acres	PRESENT PRODUCTION TOTAL Vegetation Pounds	PRESENT PRODUCTION TOTAL Useable Forage Pounds	Useable Forage AUMs
Bear Canyon	3,538	1,189,600	332,000	415
Bell Mountain	6,633	2,344,000	640,000	800
Bernice	22,687	6,870,308	1,096,000	1,370
Horse Creek	5,559	2,246,084	730,400	913
Cedarville	19,655	8,678,594	3,662,400	4,578
Howe Peak	31,486	12,645,213	2,556,800	3,196
Mahogany Butte	52,451	16,285,841	1,830,400	2,288
Sinks	19,78[illegible]	8,091,087	1,656,800	2,071
Wet Creek	6,8[illegible]6	1,506,381	572,000	715
Wigwam Butte	15,[illegible]87	3,391,079	792,000	990
Sub Total	183,383	63,248,187	13,868,800	17,336
Hawley Mountain	71,655	26,488,148	6,269,600	7,837
Jumpoff	14,677	4,654,670	941,600	1,177
Pass Creek	17,949	6,676,738	1,380,800	1,726
Spring Canyon	37,005	11,848,317	2,342,400	2,928
Uncle Ike	27,872	9,613,778	1,172,000	1,465
Warm Springs	6,711	3,311,722	1,158,400	1,448
Williams Creek	5,363	1,576,902	392,000	490
Sub Total	181,232	64,170,275	13,656,800	17,071
Briggs Canyon	14,691	4,913,420	864,800	1,081
Burnt Canyon	5,713	1,826,710	620,800	776
Cedar Point	1,274	448,893	153,600	192
Eight Mile Canyon	1,684	478,123	63,200	79
Kyle Canyon	711	199,638	34,400	43
Sawmill	5,839	2,135,599	565,600	707
Summit	3,216	1,261,649	265,600	332
Sub Total	33,128	11,264,032	2,568,000	3,210
Totals	398,243	138,682,494	30,093,600	37,617

Note: In some allotments present production total biomass may be larger than future production total biomass. This is due to changes in vegetation composition. In allotments with a dense shrub cover, shrubs will be reduced and grasses increased. This will result in a net future decrease in total biomass and a net future increase in total useable forage.

Potentially suitable range must have favorable slope and have the possibility of reducing the distance to water to less than two miles or improving the forage production to better than 32 acres per AUM. Unsuitable range includes those areas with slopes steeper than 50% (see Appendix 2-3 for specific criteria for range suitability).

See Table 2-3 for suitability ratings by allotment. General suitability ratings for the ES area are:

Suitable 200,151 acres (50 percent of the total area)
Potentially suitable 164,951 acres (41 percent of the total area)
Unsuitable 33,141 acres (8 percent of the total area)

Rangeland Condition

Rangeland condition is the present state of the vegetation on a range site in relation to the climax (natural potential) plant community for that site. It is an expression of the degree to which the kinds, proportions and amounts of plants in a plant community relate to the climax community for the site. Rangeland condition is basically an ecological rating of the plant community.

Rangeland condition in the ES area is depicted in Figure 2-2. Table 2-4 lists the total acreage by condition classes for each allotment (refer to Appendix 2-4 for a discussion of the method used to assign rangeland condition classes in the ES area). Condition class ratings for the vegetation within the ES area are:

Excellent	2,766 acres	(1 percent of the total area)
Good	135,508 acres	(33 percent of the total area)
Fair	112,498 acres	(28 percent of the total area)
Poor	102,588 acres	(26 percent of the total area)
Seeded Areas	22,709 acres	(6 percent of the total area)
Douglas Fir & Rock Outcrops	22,174 acres	(6 percent of the total area)

Apparent Trend

The trend of rangeland condition is a determination of whether the range is improving, deteriorating or remaining stable (Appendix 2-6). Trend is usually referred to as upward, downward or stable. A stable trend used in this ES has the same meaning as a static trend. Factors used in determining trend are: changes in vegetation composition; abundance of seedlings; amount of plant residues; plant vigor; and condition of the soil surface. Because only one years trend data is available it is refered to as apparent trend.

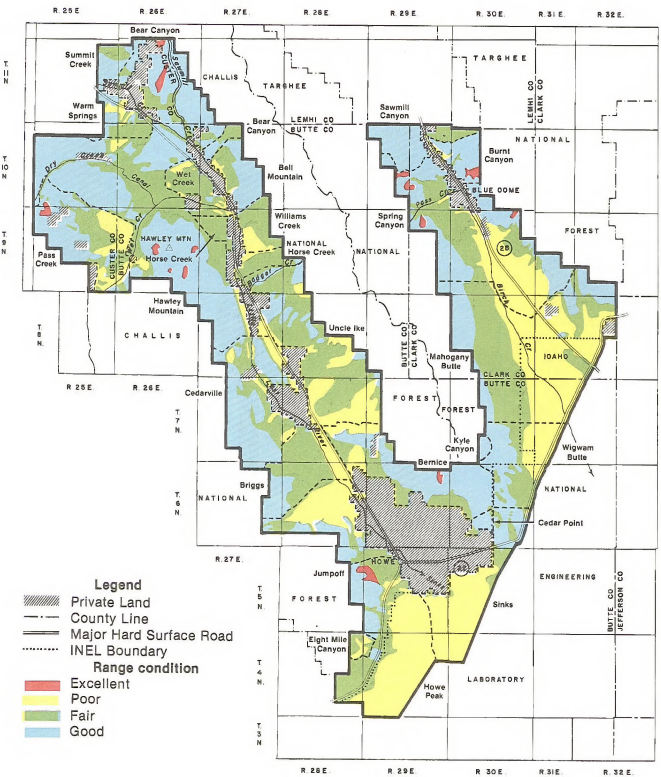
For specific trend data by allotment see Table 2-5 and Figure 2-3. Present trend data are:

Upward	211,673	acres	(43 percent of total area)
Downward	837	acres	(.3 percent of total area)
Stable	163,559	acres	(41 percent of total area)
Douglas Fir & Rock Outcrops	22,174	acres	(5.7 percent of total area)

TABLE 2-3

SUMMARY OF RANGE SUITABILITY

Allotment	Suitable	Potentially Suitable	Unsuitable
Bear Canyon	3,043	142	353
Bell Mountain	6,633	0	0
Bernice	8,394	10,890	3,403
Horse Creek	3,280	2,168	111
Cedarville	6,093	10,614	2,948
Howe Peak	0	27,708	3,778
Mahogany Butte	18,882	30,422	3,147
Sinks	0	17,605	2,176
Wet Creek	5,921	476	409
Wigwam Butte	4,433	9,172	1,682
Sub Total	56,679	109,197	18,007
Hawley Mountain	53,741	12,898	5,016
Jumpoff	2,642	10,274	1,761
Pass Creek	13,282	2,692	1,975
Spring Canyon	17,763	16,282	2,960
Uncle Ike	22,298	5,017	557
Warm Springs	6,510	67	134
Williams Creek	4,451	483	429
Sub Total	120,687	47,713	12,832
Briggs Canyon	10,724	3,820	147
Burnt Canyon	4,171	1,485	57
Cedar Point	968	89	217
Eight Mile Canyon	0	960	724
Kyle Canyon	445	47	219
Sawmill	3,679	1,576	584
Summit	2,798	64	354
Sub Total	22,785	8,041	2,302
Totals	200,151	164,951	33,141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Bear Canyon
Summit Creek
Warm Springs
Wet Creek
Bell Mountain
Williams Creek
Horse Creek
Pass Creek
Hawley Mountain
Hawley Mtn.
Uncle Ike
Cedarville
Briggs
Jumpoff
Eight Mile Canyon
Howe Peak
Sawmill Canyon
Burnt Canyon
Spring Canyon
Blue Dome
Mahogany Butte
Kyle Canyon
Bernice
Wigwam Butte
Cedar Point
Sinks
CHALLIS
TARGHEE
LEMHI CO
BUTTE CO
CLARK CO
JEFFERSON CO
NATIONAL FOREST
ENGINEERING LABORATORY
IDAHO
Legend
Private Land
County Line
Major Hard Surface Road
INEL Boundary
Range condition
Excellent
Poor
Fair
Good

Figure 2-2

TABLE 2-4

PRESENT RANGELAND CONDITION CLASS ACREAGES, BY ALLOTMENT
(Federal Acres)

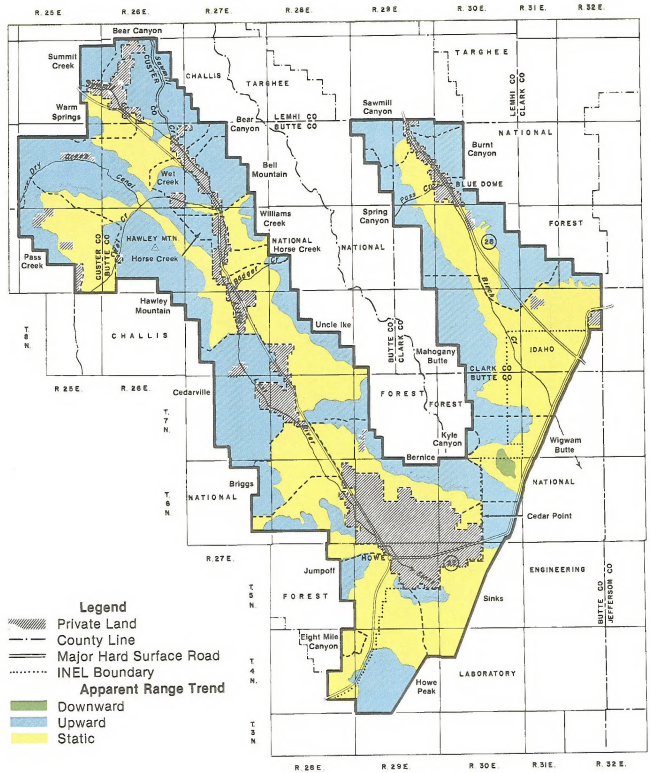
Allotment	Excellent Acres	Good Acres	Fair Acres	Poor Acres	Douglas Fir and Rock Outcrop Acres*	Seeded Acres	Total Acres
Bear Canyon		1,904	1,361		273		3,538
Bell Mountain		4,210	1,893	530	0		6,633
Bernice	174	9,234	5,832	5,365	2,082		22,687
Horse Creek		818	3,204	380	121	1,036	5,559
Cedarville		7,916	638	820	1,508	8,773	19,655
Howe Peak	698	5,931	3,263	15,543	3,508	2,543	31,486
Mahogany Butte		8,804	19,139	22,501	2,007		52,451
Sinks		2,311	2,520	14,409	541		19,781
Wet Creek			3,909	1,188	489	1,220	6,806
Wigwam Butte		4,724	4,445	5,105	1,013		15,287
Sub Total	872	45,852	46,204	65,841	11,542	13,572	183,883
Hawley Mountain	644	43,258	16,681	2,353	4,366	4,353	71,655
Jumpoff		3,665	3,309	5,901	1,292	510	14,677
Pass Creek	271	7,584	4,537	3,311	555	1,691	17,949
Spring Canyon	711	12,377	10,564	11,619	1,734		37,005
Uncle Ike		3,811	15,517	8,142	402		27,872
Warm Springs		2,626	1,510	0	2	2,573	6,711
Williams Creek			3,860	1,286	217		5,363
Sub Total	1,626	73,321	55,978	32,612	8,568	9,127	181,232
Briggs Canyon		3,415	8,083	3,131	52	10	14,691
Burnt Canyon	268	4,123	248	292	782		5,713
Cedar Point		799	45	325	105		1,274
Eight Mile Canyon		31	936	387	330		1,684
Kyle Canyon		550			161		711
Sawmill Canyon		5,366			473		5,839
Summit		2,051	1,004		161		3,216
Sub Total	268	16,335	10,316	4,135	2,064	10	33,128
Totals	2,766	135,508	112,498	102,588	22,174	22,709	398,243

*Rock outcrops and Douglas Fir areas are included so grand total acres match with other tables.

TABLE 2-5

APPARENT RANGELAND TREND IN ACRES BY ALLOTMENT

Allotment	Up	Down	Stable	Rock Outcrop and Douglas Fir	Total
Bear Canyon	3,265	0	0	273	3,538
Bell Mountain	6,633	0	0	0	6,633
Bernice	14,367	0	6,238	2,082	22,687
Horse Creek	2,999	0	2,439	121	5,559
Cedarville	18,147	0	0	1,508	19,655
Howe Peak	10,366	0	17,612	3,508	31,486
Mahogany Butte	16,611	0	33,833	2,007	52,451
Sinks	6,341	0	12,899	541	19,781
Wet Creek	5,846	0	471	489	6,806
Wigwam Butte	7,200	837	6,237	1,013	15,287
Sub Total	91,775	837	79,729	11,542	183,883
Hawley Mountain	53,095	0	14,194	4,366	71,655
Jumpoff	3,157	0	10,228	1,292	14,677
Pass Creek	5,789	0	11,605	555	17,949
Spring Canyon	24,845	0	10,426	1,734	37,005
Uncle Ike	10,872	0	16,598	402	27,872
Warm Springs	2,231	0	4,478	2	6,711
Williams Creek	1,523	0	3,623	217	5,363
Sub Total	101,512	0	71,152	8,568	181,232
Briggs Canyon	5,091	0	9,548	52	14,691
Burnt Canyon	4,931	0	0	782	5,713
Cedar Point	200	0	969	105	1,274
Eight Mile Canyon	0	0	1,354	330	1,684
Kyle Canyon	550	0	0	161	711
Sawmill	4,559	0	807	473	5,839
Summit	3,055	0	0	161	3,216
Sub Total	18,386	0	12,678	2,064	33,128
Totals	211,673	837	163,559	22,174	398,243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Burnt Canyon
Bell Mountain
Wet Creek
BLUE DOME
FOREST
Williams Creek
Spring Canyon
HAWLEY MTN
Horse Creek
NATIONAL
Horse Creek
Pass Creek
CUSTER CO
BUTTE CO
Hawley Mountain
CHALLIS
Uncle Ike
BUTTE CO
CLARK CO
Mahogany Butte
IDAHO
CLARK CO
BUTTE CO
Cedarville
FOREST
FOREST
Kyle Canyon
Bernice
Wigwam Butte
Briggs
NATIONAL
NATIONAL
Cedar Point
Jumpoff
FOREST
ENGINEERING
Sinks
BUTTE CO
JEFFERSON CO
Eight Mile Canyon
LABORATORY
Howe Peak
Legend
Private Land
County Line
Major Hard Surface Road
INEL Boundary
Apparent Range Trend
Downward
Upward
Static

Figure 2-3

Endangered, Threatened, or Rare Plants

The Endangered Species Act of 1973 required protection for federally listed endangered and threatened plant species. Endangered species are those that are considered to be in danger of extinction throughout all or a significant portion of their range. Threatened species are considered to be those which may become endangered in the forseeable future.

Lists of proposed endangered and threatened plant species were published in the Federal Register on July 1, 1975 and again on June 16, 1976. In addition, several Idaho botanists have compiled lists of plants they consider to be rare or uncommon. A summary of the current knowledge of endangered and threatened plants in Idaho was completed in 1977 (Hendersen, et. al., 1977).

During May, June and July of 1978, the ES area was surveyed for federally endangered, threatened and rare Idaho plant species, (Andersen and Hendersen, 1978). Table 2-6 shows the results of this survey. Three endangered, six threatened and nine state rare plants were located.

SOILS

Soil Inventory

The Soil Conservation Service conducted a third order survey during 1978 under a contract with BLM. The survey identified the type, location and extent of major soils in the area. The survey was conducted in accordance with the SCS National Soils Handbook and related SCS soils memoranda. The soils were mapped on color aerial photos at a scale of 1:31,680. The soils mapping units were transferred to USGS 7 1/2" topographic quads which were used as base maps for computation of potential production and related information. Appendix 2-6 lists the soil mapping units, the soil series in the map units and the acreage. Each mapping unit consists of one or more soils of major extent and inclusions of soils of minor extent. Appendix 2-7 presents the important properties and characteristics of each soil series.

Soil Categories

The soils in the ES area can be grouped into four general categories based on geographical location: flood plain, basalt plain, alluvial fans and terraces, foothills and mountains. (Figure 2-4). A brief characterization of each group, the soil mapping unit number and the associated vegetation types follows:

TABLE 2-6

FEDERALLY ENDANGERED[1], AND THREATENED[1], OR RARE[2] STATE PLANTS
IN THE LITTLE LOST-BIRCH CREEK ES AREA

Common Name	Scientific Name	Federal Standing	State Standing
alpine draba	Draba oreibata		Rare
apus milkvetch	Astragalus ceramicus var. apus		Rare
arid penstemon	Penstemon aridis		Rare
cluster milkvetch	Astragalus amnis-amissi	Endangered	
drawf cryptantha	Cryptantha nubigena	Threatened	
fuzzy sagebrush	Artemisia papposa	Threatened	
hoary phacelia	Phacelia incana		Rare
featherleaf kittentails	Synthyris pinnatifida var. canescens	Threatened	
Idaho bladderpod	Lesquerella carinata	Threatened	
Idaho hymenopappus	Humenopappus filifolius var. idahoensis	Threatened	
invested cryptantha	Crypthantha interrupta	Threatened	
longluisia	Longluisia punctata		Rare
longspike Indian paintbrush	Castilleja longispica		Rare
Lost River silene	Silene scapusa var. lobata	Threatened	
milkvetch	Astragalus lentiginosus var. latus	Threatened	
primrose	Primula (undetermined)		Rare
pussytoes	Antennaria arcuata	Endangered	
sagebrush cryptantha	Cryptantha scoparia		Rare
snowy spring parsley	Cymopterus nivalis	Endangered	
swallen ricegrass	Oryzopsis swallenii		Rare

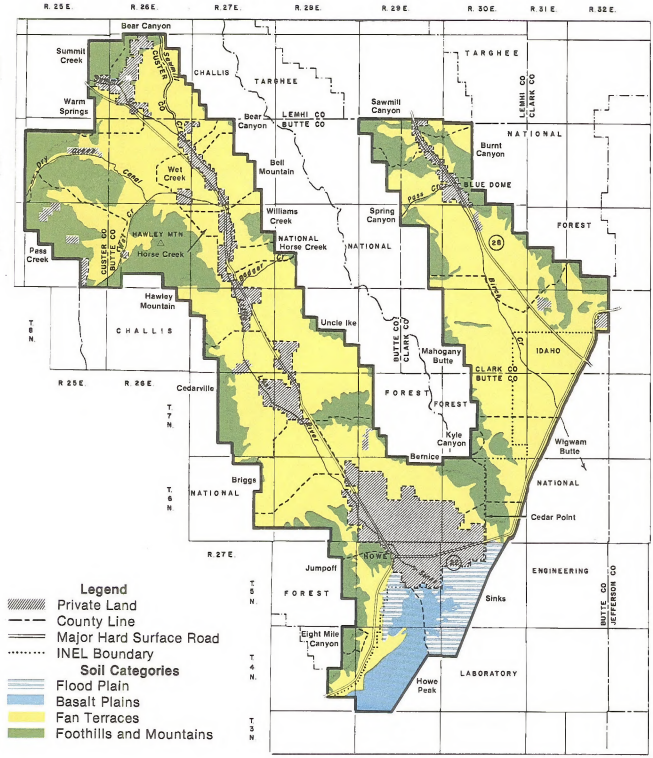
Sources: Plant Names: SCS, 1978

Federal Standings: Henderson, et.al., 1977

State Standing: Wellner and Johnson, 1974

[1]Proposed

[2]Officially Listed as threatened or endangered by U.S. Fish and Wildlife Service.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Burnt Canyon
BLUE DOME
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Wet Creek
Bell Mountain
Williams Creek
Spring Canyon
Pass Creek
HAWLEY MTN.
Horse Creek
CUSTER CO
BUTTE CO
NATIONAL Horse Creek
NATIONAL
Hawley Mountain
Uncle Ike
BUTTE CO
CLARK CO
Mahogany Butte
IDAHO
CLARK CO
BUTTE CO
Cedarville
FOREST
FOREST
Kyle Canyon
Bernice
Wigwam Butte
Briggs
NATIONAL
NATIONAL
Cedar Point
Howe
ENGINEERING
Jumpoff
FOREST
Sinks
BUTTE CO
JEFFERSON CO
Eight Mile Canyon
LABORATORY
Howe Peak
Legend
Private Land
County Line
Major Hard Surface Road
INEL Boundary
Soil Categories
Flood Plain
Basalt Plains
Fan Terraces
Foothills and Mountains

Figure 2-4

1. Flood Plain - (77A) - (16,000 acres, - 4% of the ES area)

These soils were formed from alluvium, primarily in the sinks areas of Birch Creek, Little Lost River and Big Lost River. Elevation for these soils varies from 4700 to 5000 feet. The soils range from deep, moderately alkaline silt loam to fine sandy loam. Permeability is moderate, available water capacity is medium to high, runoff is slow, the erosion hazard is slight and current erosion is slight. Associated vegetation is Wyoming sagebrush, winter fat, saltbrush, rabbitbrush, bluebunch wheatgrass, Indian ricegrass, and bluegrass. Median potential production is 500 pounds per acre annually (lbs/ac/yr) of biomass.

2. Basalt Plains - (57AD) - (22,229 acres, - 6% of the ES area)

This group of soils was formed from wind-deposited silt and fine sands. Elevations range from 4700 to 5300 feet. The soils are a deep, well drained silty loam to loamy, with some basalt bed rock outcrops occurring. Permeability is moderate, available water capacity is high, runoff is slow to medium, and the erosion hazard is slight to moderate. Current erosion is slight. Associated vegetation is: Wyoming sagebrush, rabbitbrush, bluebunch wheatgrass, Indian ricegrass, sandbergs bluegrass, and bottlebrush squirrel tail. Median potential production is 300 lbs/ac/yr.

3. Alluvial Fans and Terraces - (2A,D; 3D,E; 11DG; 15D; 17A,D; 25DF; 29A,D; 30A,D,E,G; 31AD; 35A,D; 36D,EG; 37D; 46A,D,E; 47D; 51A,D; 52D; 56A; 64A,D; 65A,D,EF; 70AF; 71A,D; 72D; 73E; 80A,D,E; 83A; 84D) - (255,174 acres, - 64% of the ES area)

This group of soils was formed from alluvial outwash from the mountain ranges which seperate and parallel the major drainages. Bedrock and parent material is primarily limestone with minor amounts of basalt and quartzites. Elevation varies from 4800 to 7400 feet, and the annual precipitation varies from 7.5 to 13 inches.

These soils are complex and variable but have many similarities. In general, they are gravelly to very gravelly loams, well drained, moderate to high permeability, low to moderate available water capacity and low to moderate erosion susceptibility. Current erosion is slight. Soil depth varies from a shallow 6" on slopes 10% or steeper to a deep 60" plus at the toe of the fans.

Vegetation varies from the Wyoming sagebrush - bluebunch wheatgrass type at the lower elevations to mountain big sage - bluebunch - Idaho fescue types at the higher elevations. Median potential production is 400 lbs/ac/yr.

4. Foothills and Mountains - (13D,E,F,G; 32F,G; 75EF,G; 90D,E,F, 95D,E,FG; 98E,G) - (104,840 acres, - 26% of the ES area.

These soils are found on mountain sideslopes, ridges and foot hills and they were formed from bedrock or material washed down from higher elevations in the mountains. The soils shown in Map Units 13D,E,F, & G were formed from basalt material Remaining soils are mostly from limestone with minor amounts of quartzites. Elevation varies from 6200 to 8400 feet, and the annual precipitation varies from 10 to 13 inches.

The soils vary from a gravelly loam to an extremely stoney loam. Rock outcrops are prevalent in this group. Some mapping units have up to 35 percent rock outcrop. The soils are shallow to deep; well drained; moderate to high water capacity; moderate to high runoff; and erosion hazard is moderate to extreme.

The vegetation types vary from black sagebrush-bluebunch wheatgrass at the lower elevations to mountain mahogany and douglas fir types at the higher elevations. Vegetation types vary according to elevation, aspect and soil depth. Median potential production is 600 lbs/ac/yr.

EROSION

Sediment Yield was determined using the Pacific Southwest Inter-Agency Committee method (see Appendix 2-8). The soil loss is approximately 27 acre-feet per year (ac ft/yr) or 44,757 tons from the entire ES area. An acre-foot of sediment weighs about 1,650 tons. Table 2-7 gives present sediment yield in each allotment. Appendix 2-9 shows sediment yield by allotment by soil mapping unit.

Erosion classes have been defined (USDI, BLM 1970) from the Sediment Yield Rating System as follows:

Erosion Class	ac ft/sq mi/yr
Low	0.3
Moderate	0.3 0.9
High	0.9 or greater

The highest allotment erosion rate is Wigwam Butte with an erosion rate of 0.13 ac ft/sq mi/yr. The highest mapping unit rate is 75 G with an erosion rate of 0.24 ac ft/sq mi/yr (Appendix 2-9). This means 100 percent of the area is in the low erosion class.

Under the SCS wind erosion rating system, a group 1 soil would be subject to severe wind erosion, while soils of group 8 are quite wind resistant. The SCS soil survey rated 75 percent of the ES area soils in wind erodability group 8 and 25 percent in groups 4L and 5. Current wind erosion is so slight it is not measureable.

TERRESTRIAL WILDLIFE

Each of the 15 vegetation types (Figure 2-1) in the ES area contains several plant communities. The vegetation composition of a plant community determines the habitat value of that community to various wildlife species. The physical location and interrelationships of the plant communities in the ES area determine which animals will utilize which plant communities. The greater the plant community diversity, the greater diversity of wildlife species.

In any given year a minimum of 58 species of mammals, 219 species of birds, 8 reptiles and 8 amphibians could be observed within the ES areas. A species list by season of use is available at the Idaho Falls District Office, BLM, or the Idaho Department of Fish and Game at Idaho Falls.

TABLE 2-7

PRESENT SEDIMENT YIELD PER YEAR BY ALLOTMENT

Allotment Name	Acres	Sediment Yield Acre Feet Per Sq/Mile	Allotment
Hawley Mountain	71,655	0.11	5.8
Jumpoff	14,677	0.12	1.2
Pass Creek	17,949	0.08	2.9
Spring Canyon	37,005	0.05	1.9
Uncle Ike	27,872	0.05	1.8
Warm Springs	6,711	0.06	0.4
Williams Creek	5,363	0.07	0.7
Bear Canyon	3,538	0.04	0.8
Bell Mountain	6,633	0.07	0.7
Bernice	22,687	0.06	2.3
Cedarville	19,655	0.06	2.1
Horse Creek	5,559	0.08	0.1
Howe Peak	31,486	0.06	1.3
Mahogany Butte	52,451	0.03	1.2
Sinks	19,781	0.05	0.5
Wet Creek	6,806	0.00	0.0
Wigwam Butte	15,287	0.13	0.4
Briggs Canyon	14,691	0.04	1.5
Burnt Canyon	5,713	0.07	0.6
Cedar Point	1,274	0.07	0.1
Eight Mile Canyon	1,684	0.08	0.3
Kyle Canyon	711	0.06	0.1
Sawmill Canyon	5,839	0.05	0.3
Summit	3,216	0.10	0.1
Totals	398,243		27.1

Endangered, Threatened or Sensitive Wildlife Species

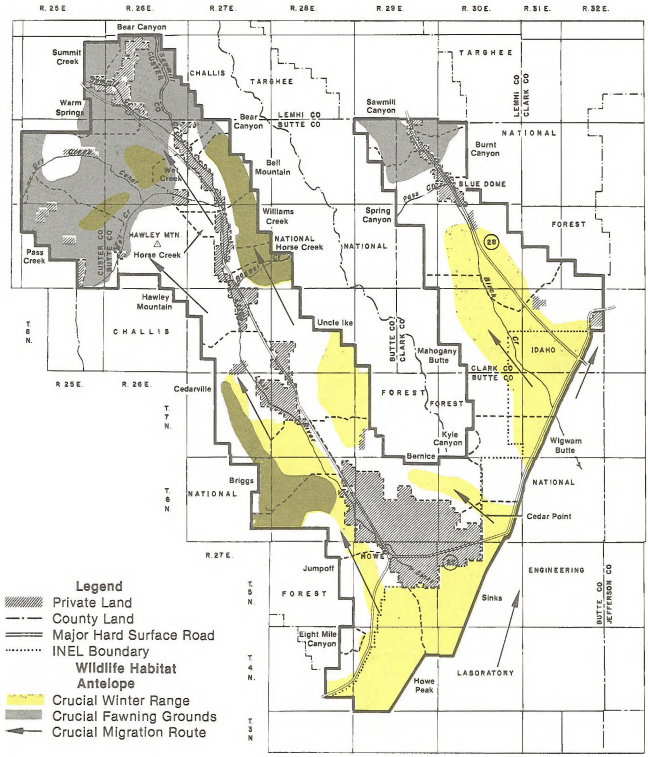
The American peregrine falcon and the bald eagle occur as migrants in the fall and winter in the ES Area and are officially classified as endangered species.

State sensitive species known to be in the area are the Canada lynx, bobcat, ferruginous hawk, long billed curlew, burrowing owl, pigeon hawk and spotted bat. Sensitive species is a BLM Idaho Department of Fish and Game term for those species whose restricted range, habitat requirements, and/or low population numbers make them vunerable to elimination from the State if adverse impacts on populations or habitat occur.

Canada lynx and bobcat are predominantly found in the upland areas (rimrock, foothills, and mountains). Their primary food is rodents and rabbits. Ferruginous hawks are primarily found in the sagebrush grass type. These hawks will nest on the ground and are prone to nest desertion when physically disturbed during the incubation period (March 21st to June 1). Their primary food item is jackrabbits. Long billed curlews are present from mid April to August 1. They are a ground nesting species of open grassy areas on level to rolling hills. The primary food for curlews is insects. The burrowing owl is primarily found in the sagebrush/grass type in flat to rolling country. They nest in abandoned ground squirrel and badger dens. Their primary food is insects and reptiles. Pigeon hawks are primarily found in the riparian and open woodland habitats. Their primary food is small birds. Spotted bats are primarily found in arid areas. Their primary food is insects caught on the wing over water sources.

Big Game

Big game animals in the area are antelope, deer elk, bear, cougar, mountain goat, big horn sheep and moose. Crucial habitat is defined as that habitat where animals of a given species tend to concentrate during periods of stress or for other reasons, where the size and habitat quality of critical areas can be the major limiting factor on the size of a given population. Crucial areas for big game are shown on Figures 2-5 and 6. Approximately 44 percent of the antelope in the State of Idaho occur in the ES area. Antelope range throughout the ES area yearlong except in the forested areas on Hawley Mountain and the Donkey Hills (Figure 2-5). The majority of the mule deer occur in the crucial areas shown in Figure 2-6, however, mule deer are found in scattered numbers throughout the ES area, particularly during the spring, summer and fall. Elk are restricted primarily to the crucial areas as shown in Figure 2-6. Approximate populations of big game occurring in each allotment are presented in Table 2-8. Population levels and degree of use varies annually in the ES area for big game. Fluctuations depend mostly on annual and seasonal weather conditions, habitat conditions and other factors in the area and on adjacent lands. Population trends are up (Idaho Department of Fish and Game, 1978), for big game. Antelope and elk have increased steadly during the past 5 years and deer in the past 4 years.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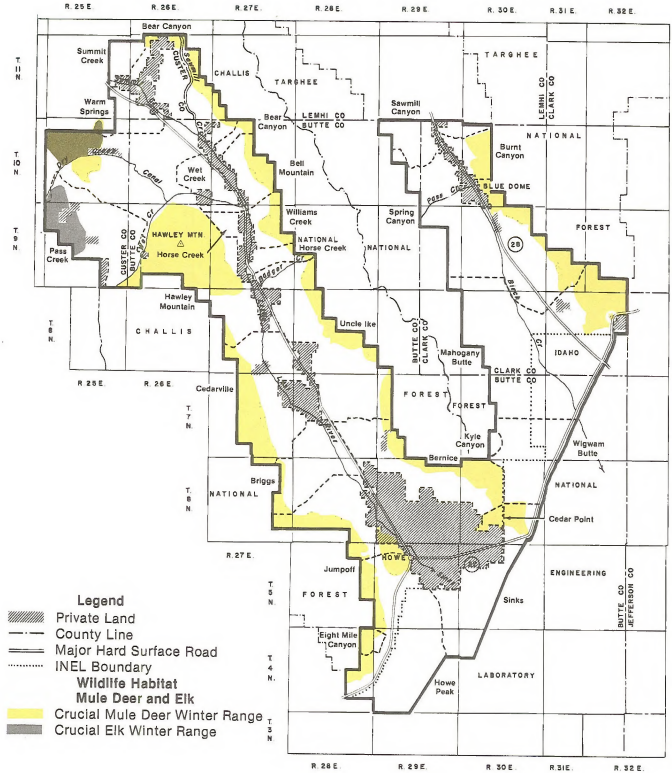
ENGINEERING
Sinks
BUTTE CO
JEFFERSON CO
Eight Mile Canyon
LABORATORY
Howe Peak
Legend
Private Land
County Land
Major Hard Surface Road
INEL Boundary
Wildlife Habitat
Antelope
Crucial Winter Range
Crucial Fawning Grounds
Crucial Migration Route

Figure 2-5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BLUE DOME
IDAHO
ENGINEERING
LABORATORY
Legend
Private Land
County Line
Major Hard Surface Road
INEL Boundary
Wildlife Habitat
Mule Deer and Elk
Crucial Mule Deer Winter Range
Crucial Elk Winter Range

Figure 2-6

TABLE 2-8

ESTIMATED POPULATIONS OF BIG GAME ANIMALS BY ALLOTMENT

Allotment	Antelope			Deer			Elk		
	Spring	Summer	Fall/Winter	Spring	Summer	Fall/Winter	Spring	Summer	Fall/Winter
Bear Canyon	47	47	0	15	8	50			
Bell Mountain	150	150	100	65	32	100			
Bernice	200	200	400	74	0	74			
Cedarville	300	400	500	221	55	368			
Howe Peak	580	352	718	42	14	77			
Horse Creek	150	150	235	11	3	23			
Mahogany Butte	400	150	400	40	0	80			
Sinks	410	308	622	25	25	25			
Wet Creek	75	75	100	0	0	0			
Wigwam Butte	100	100	100	0	0	0			
Hawley Mountain	850	900	520	181	88	533	47	47	188
Jumpoff	235	215	735	27	27	97			
Pass Creek	175	175	150	42	42	12	50	50	50
Spring Canyon	700	600	450	40	40	120			
Uncle Ike	450	400	350	66	0	66			
Warm Springs	150	150	0	7	1	7	3	3	12
Williams Creek	200	100	100	69	17	100			
Briggs Canyon	200	200	400	0	0	14			
Burnt Canyon	150	250	100	8	8	40			
Cedar Point	0	0	0	40	40	40			
Eight Mile Canyon	5	2	5	12	0	12			
Sawmill Canyon	200	150	0	0	0	0			
Summit	78	78	0	0	0	0			
Totals	5,805	5,152	5,985	985	400	1,838	100	100	250

Black bear, cougar, mountain goat, bighorn sheep and moose rarely if ever occur on BLM administered lands and will not be discussed further in this statement.

Estimated dietary composition by forage class and by season for antelope, deer and elk is presented in Appendix 1, Exhibit 3. Antelope, deer and elk habitat and acreage by allotment is shown in Table 2-9.

Upland Game

Upland game found in the ES area include sage grouse, chukars, mourning doves, ring-neck pheasant, blue grouse, ruffed grouse, spruce grouse, Hungarian partridge, cottontail and pygmy rabbits. Sage grouse are the most numerous upland game bird and are found throughout the ES area. Mourning doves and cottontails occur in high densities in riparian areas and moderate densities in sagebrush habitats. Chukars are usually found in rough canyons with a sagebrush/grass plant community. Blue grouse, ruffed grouse, and spruce grouse habitat is limited mainly to the higher elevation forested areas on Hawley Mountain and Donkey Hills. Ringneck pheasants occur adjacent to agricultural areas, mainly in the lower Little Lost Valley. Hungarian partridge occur thoughout the ES area, mainly on the edge of agricultural areas. Crucial sage grouse habitat is shown in Figure 2-7. Acres of crucial sage grouse habitat by allotment are listed in Table 2-9.

Pheasants and the three forest grouse species occur in extremely limited numbers on the BLM administered lands in the ES area and will not be discussed further in this ES.

Water Fowl

Small resident populations of water fowl, primarily mallards and green-winged teal, occur along some of the streams and small reservoirs in the ES area. There are no crucial waterfowl nesting or migratory resting sites in the ES area.

Fur Bearers

The riparian habitats are the most significant for the majority of the species which are harvested for their pelts. These are racoons, weasel, minks, skunks, beaver and muskrat. Foxes, coyotes, bobcats and badgers are found thoughout the ES area and harvested in the greatest number.

Non-Game

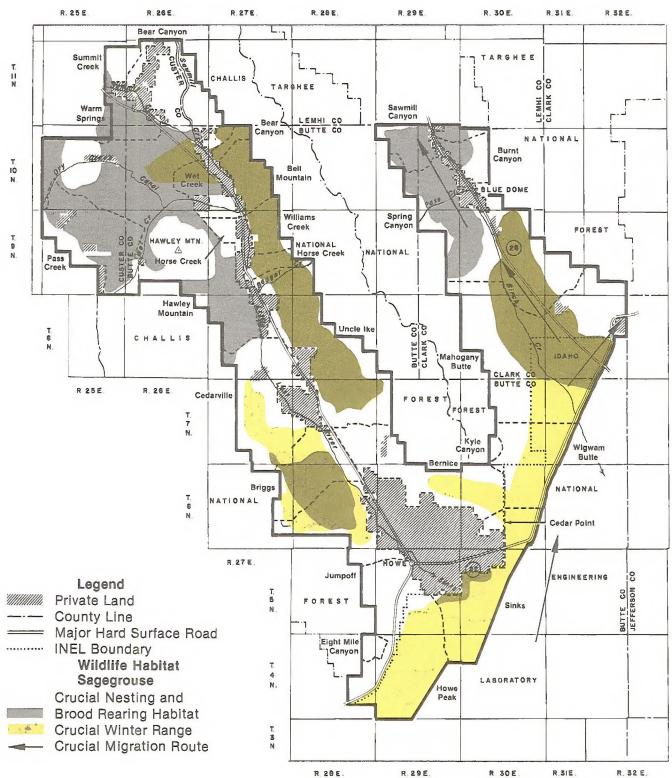
Non-game wildlife are those species for which no hunting season or harvest is allowed. Such species include numerous birds, mammals, reptiles, amphibians, and invertebrates. These animals make up the majority of the fauna in the ES Area.

TABLE 2-9

BIG GAME AND SAGE GROUSE HABITAT ACREAGE BY ALLOTMENT

Proposed Allotment	DEER Crucial Winter Range	ELK Crucial Winter Range	ANTELOPE Normal	ANTELOPE Crucial Fawning Habitat	ANTELOPE Crucial Winter Range	SAGE GROUSE Crucial Brood Rearing	SAGE GROUSE Crucial Winter Range
Bear Canyon	1,127/32%		3,247/92%	2,345/66%		1,702/48%	1,702/48%
Bell Mountain	3,159/48%		6,572/99%	6,200/93%	6,200/93%	6,572/99%	6,572/99%
Bernice	7,874/35%		19,737/87%		11,520/51%	5,670/25%	5,100/22%
Cedarville	9,236/47%		19,655/100%	3,200/16%	10,240/52%	300/2%	6,720/34%
Horse Creek	502/9%		5,519/94%	3,000/51%	3,000/51%	3,000/51%	3,000/51%
Howe Peak	5,360/17%		26,678/85%		26,678/85%	500/2%	17,920/57%
Mahogany Butte	8,155/15%		52,151/99%		31,940/61%	20,000/38%	25,600/49%
Sinks	2,068/10%		19,781/100%		19,781/100%	800/4%	19,781/100%
Wet Creek			6,806/100%	1,900/28%	750/11%	4,459/66%	2,400/35%
Wigwam Butte			11,065/72%		6,401/42%		6,401/42%
Hawley Mountain	26,674/37%*	3,506/5%	62,655/87%	41,500/58%	5,760/8%	40,691/57%	4,500/6%
Jumpoff	6,731/46%		11,293/77%	9,000/61%	11,293/77%	5,000/34%	10,400/71%
Pass Creek	818/5%	4,448/25%	17,949/100%	17,949/100%	1,600/9%	14,100/79%	
Spring Canyon	5,296/14%		34,669/94%	2,500/7%	11,000/30%	23,000/62%	10,200/28%
Uncle Ike	5,933/21%		27,872/100%	4,000/14%	8,300/30%	25,000/90%	25,000/90%
Warm Springs	300/4%	300/4%	6,711/100%	6,711/100%		6,711/100%	
Williams Creek	3,160/59%		5,363/100%	5,363/100%	5,363/100%	4,500/84%	4,500/84%
Briggs Canyon	1,360/9%		14,691/100%	4,480/30%	10,200/69%	6,400/44%	9,600/65%
Burnt Canyon	3,704/65%		4,110/72%	2,560/45%		2,360/41%	
Cedar Point	1,274/100%					500/39%	600/47%
Eight Mile Canyon	1,362/81%		353/21%		353/21%		
Kyle Canyon							
Sawmill Canyon			5,839/100%	5,839/100%		5,839/100%	
Summit			3,216/100%	3,216/100%		3,216/100%	
Totals	94,093/24%	8,254/2%	365,932/89%	119,763/30%	171,379/43%	180,320/	159,996/

* The percentages shown indicate the portion of the allotment involved. For example, 37% of the Hawley Mountain Allotment is crucial deer winter range.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Bear Canyon
Summit Creek
CUSTER CO
CHALLIS
TARGHEE
LEMHI CO
BUTTE CO
Warm Springs
Sawmill Canyon
CLARK CO
NATIONAL
Burnt Canyon
Bell Mountain
Wet Creek
Dry Creek
BLUE DOME
Williams Creek
Spring Canyon
FOREST
HAWLEY MTN.
Horse Creek
NATIONAL
Pass Creek
Hawley Mountain
Uncle Ike
Mahogany Butte
IDAHO
CLARK CO
BUTTE CO
Cedarville
FOREST
Kyle Canyon
Bernice
Wigwam Butte
Briggs
NATIONAL
Cedar Point
HOWE
ENGINEERING
Jumpoff
Sinks
JEFFERSON CO
Eight Mile Canyon
LABORATORY
Howe Peak
Legend
Private Land
County Line
Major Hard Surface Road
INEL Boundary
Wildlife Habitat
Sagegrouse
Crucial Nesting and Brood Rearing Habitat
Crucial Winter Range
Crucial Migration Route

Figure 2-7

Studies on non-game species are very limited in the ES area. A raptor inventory was contracted to Idaho State University in 1975. Eleven species commonly occur of which golden eagles and prairie falcons have the highest public interest. Potential nesting sites were identified.

Riparian habitats have the greatest species diversity and are of major importance for many of these animals. Riparian habitats become of even more importance during periods of drought. At present, riparian areas are used extensively by cattle which has resulted in habitat degredation for riparian non-game species. These riparian areas are used extensively by migrating song birds and are crucial to many species.

AQUATIC WILDLIFE

Seventeen streams in the ES area provide about 80 miles of habitat for resident coldwater game fish (Figure 2-8). Species include rainbow, Dolly Vardin, brook, and cutthrout trout. Table 2-10 lists the species and approximate number of trout per mile for each stream.

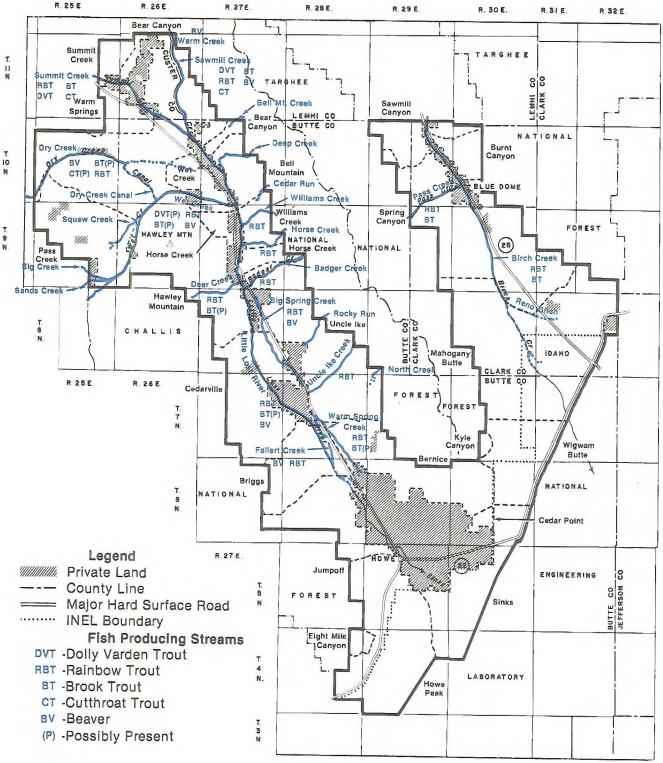
TABLE 2-10

COLD-WATER GAME FISH PRESENT IN THE
LITTLE LOST-BIRCH CREEK PLANNING UNIT

Stream	Species	Number/mile
Sawmill Creek	DV, RB	100
Warm Creek	DV, RB, CT	50
Williams Creek	Trout	25
Horse Creek	RB	100
Badger Creek	RB, BT, DV	100
North Creek	RB	--
Warm Springs Creek	RB, BT, DV	25
Summit Creek*	RB, CT, DV	1000
Wet Creek	RB, CT, BT	1500
Dry Creek	RB, BT, DV	10
Deer Creek	RB, BT	50
Squaw Creek	RB	200
Big Spring Creek	RB, BT, DV	1000
Fallert Creek	Trout	50
Little Lost River	RB, CT, DV, BT	300
Pass Creek	RB, BT	50
Birch Creek	RB, BT	800

RB - rainbow trout
DV - Dolly Varden trout
BT - brook trout
CT - cutthroat trout

* In general, the higher the number of fish per square mile, the better the habitat condition. The exception is Summit Creek. Summit Creek is fenced from livestock grazing and in excellent condition immediately up stream from the ES area. Therefore, the number of fish sampled in the ES area is believed to be a result of a downward drift of fish from the adjacent area.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T. 3 N.
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Warm Creek
Summit Creek
Sawmill Creek
Summit Creek
Warm Springs
TARGHEE
Bell Mt. Creek
Bear Canyon
LEMHI CO
BUTTE CO
Sawmill Canyon
NATIONAL
Deep Creek
Burnt Canyon
Dry Creek
Bell Mountain
Cedar Run
BLUE DOME
Dry Creek Canal
Wet Creek
Williams Creek
Spring Canyon
FOREST
Squaw Creek
HAWLEY MTN
Williams Creek
Horse Creek
NATIONAL
Pass Creek
Big Creek
Badger Creek
Birch Creek
Sands Creek
Deer Creek
Big Spring Creek
Reno Ridge
Hawley Mountain
Rocky Run
Uncle Ike
CHALLIS
Little Lost River
Mahogany Butte
IDAHO
North Creek
CLARK CO
BUTTE CO
Cedarville
FOREST
Warm Spring Creek
Kyle Canyon
Fallert Creek
Wigwam Butte
Bernice
Briggs
NATIONAL
Cedar Point
NOWE
Jumpoff
ENGINEERING
FOREST
Sinks
Eight Mile Canyon
LABORATORY
Howe Peak
Legend
Private Land
County Line
Major Hard Surface Road
INEL Boundary
Fish Producing Streams
DVT -Dolly Varden Trout
RBT -Rainbow Trout
BT -Brook Trout
CT -Cutthroat Trout
BV -Beaver
(P) -Possibly Present

Figure 2-8

A stream survey by the BLM conducted during April and May of 1978, determined the condition of each stream using the BLM stream survey procedure (Appendix 2-10). Habitat conditions of each stream are shown in Table 2-11. Most of the resident trout habitat is in poor to fair condition (75 percent). This poor to fair condition is due to lack of stream bank vegetation and overhanging banks, unstable streambanks, and streambed siltation, i.e. more than 50 percent of the stream bank was bare ground. Irrigation diversions, heavy grazing of riparian areas by livestock, winter icing, and in some cases human activity, have also reduced the habitat condition along streams.

Spawning areas are generally associated with those portions of a stream that receive recharge from ground water. During the winter, the Little Lost River is intermittently dry at the Summit - Sawmill Creek confluence area. The Little Lost River receives ground water immediately below this area and is a good spawning site. However this area is predominately on private land and total protection from grazing on the BLM portion of the stream would have no beneficial affect unless the total area were protected. Natural reproduction is believed to occur on the other 16 streams in the unit. Of particular importance is Wet Creek which has a wild trout self sustaining population and trout up to 18 inches (about 2 lbs.) have been taken.

The diversity and productivity of aquatic organisms other than fish is good. Organisms such as some of the stone flies and caddisflies listed in Appendix 2-11 are indicative of a high water quality environment. Also sculpins (Cottus sp.) were noted in all streams and are another indicator of high water quality.

TABLE 2-11

PRESENT HABITAT CONDITIONS OF RESIDENT COLD-WATER GAME FISH IN STREAMS OF THE LITTLE LOST-BIRCH CREEK AREA

Stream	Miles of Streams by Condition Class		
	Good	Fair	Poor
Sawmill Creek	2.0	2.0	4.0
Warm Creek	0.75		0.25
Williams Creek		2.0	1.0
Horse Creek	1.0	2.0	1.0
Badger Creek		5.0	
North Creek	0.25		
Warm Spring Creek		3.0	
Summit		0.5	2.0
Wet Creek	6.0	2.0	3.0
Dry Creek	1.5		6.5
Deer Creek	2.0	1.5	
Squaw Creek	0.5		0.5
Big Spring Creek		5.0	
Fallert Creek			3.0
Little Lost River	2.0	4.0	2.0
Pass Creek		1.0	4.0
Birch Creek	4.0	5.0	0.5
Total Miles	20.0	33.0	27.75
Percent	25	41	34

LIVESTOCK GRAZING

Both cattle and sheep are licensed in the ES area. Cattle account for 62 percent of the livestock use. The cattle grazing season runs from April 16 to January 30. Sheep account for 38 percent of the livestock use. Sheep grazing takes place from April 1 to July 3 and from September 1 to February 28. For season of use by allotment see Table 1-6.

Thirty grazing permittees use 31 allotments in the area. Twenty-three operators run cattle, two operators run sheep, and five operators run both sheep and cattle.

Grazing privileges were adjudicated in 1956, 1960 and 1962, in the Hawley Mountain, Birch Creek and Howe grazing units respectively. These units were later combined to form the Little Lost-Birch Creek Planning Unit. During adjudication, the current allotments and grazing seasons were established.

In 1978, a vegetation inventory was completed on the ES area using ESIM. Forage allocations based on that inventory indicated that the ES area was over licensed by 2,700 AUMs. Range readiness studies showed that in some allotments, spring turnout dates were earlier than appropriate to meet the phenological requirements of forage plants. The following allotments may require adjustments in spring turnout dates.

Allotment	Existing Turnout	Phenological Based Turnout Date
Warm Springs	5/01	5/16
Hawley Mountain	5/01	5/16
Wet Creek	5/01	5/16
Bell Mountain	5/01	5/16
Williams Creek	5/01	5/16
Horse Creek	5/01	5/16
Jumpoff	4/20	5/16
Howe Peak	4/16	5/01
Bernice	4/16	5/01
Sinks	4/21	5/01
Wigwam Butte	4/01	5/01
Kyle Canyon	4/16	5/01
Mahogany Butte	4/20	5/01
Sawmill	5/07	5/16

Production of range beef cattle and calves, feeders, and other agricultural products are major land uses in the ES area. Permittees utilize Public Lands and/or National Forest Lands in conjunction with their private lands to maintain their year-long ranching operations.

Most cattle permittees run cow-calf or cow-calf-yearling operations. Cows are bred to calve between late January and April. Calves are usually weaned and sold in the late fall. Cattle are usually turned onto BLM allotments in the spring then moved to National Forest ranges in the summer. In a few cases, they remain on BLM allotments through the summer. In late summer, the cattle return from the National Forest range to the BLM allotments. In late fall or early winter, they are moved back to private land.

The sheep permittees generally lamb around February or March. When lambs are old enough to travel, April or May, they move to the BLM allotments, then on to National Forest lands for the summer season. In the fall, the sheep return to the BLM allotments where they remain into the winter season. The sheep are moved onto private land in mid or late winter where they remain until spring.

Hay, grain and pasture produced on private lands are used for winter feeding. Those products which are not used in the ranch operation are sold as cash crops. This ability to use or sell hay, grain or pasture products adds to the flexibility of the ranches to adjust to changing situations. Nearly all of the Public Lands in the ES area are used for livestock grazing by permittees who operate from private lands within or adjacent to the unit.

WATER RESOURCES

Water Quality

Water quality in the area is generally good as previously discussed in the aquatic wildlife section. Sedimentation is a problem in the lower parts of most streams due to poor bank stability in the upper portions of the streams.

An old mine tailings area on North Creek, Little Lost River drainage, is a potential source of arsenic contamination. During spring runoff, water collects in the tailings area, and some livestock have died from drinking the water (local information). The tailings area has no direct surface connection with any perennial stream, and it is unlikely that the ground water receives any of the contaminants.

Water quality data for the unit are scarce. A survey conducted in 1976 by BLM personnel measured water temperature, alkalinity, carbon dioxide, dissolved oxygen, and turbidity. Data sheets are on file at the Idaho Falls District Office.

Water Availability

Water availability for the Little Lost River has been studied by the Idaho Department of Water Resources (1974). Pertinent data are summarized below:

Total basin water yield	271,000 Acre-Feet/Year
Annual irrigation use	
Surface water	28,000 Acre-Feet/Year
Ground water	40,000 Acre-Feet/Year
Phreatophyte consumption	36,000 Acre-Feet/Year
Total outflow from valley	167,000 Acre-Feet/Year

Stream Flow

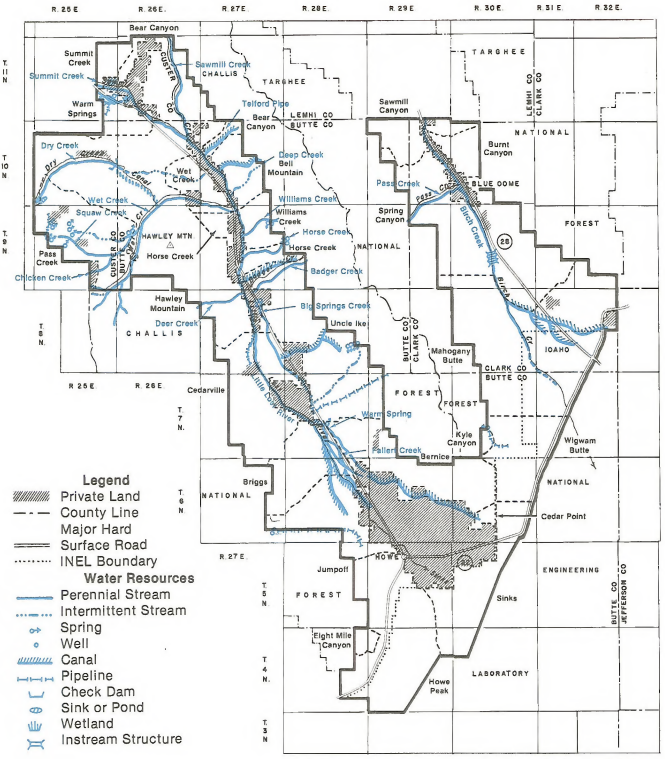
Annual mean flows for three gaging stations in the Little Lost River drainage and two on Birch Creek are summarized in Table 2-12. (See Figure 2-9).

TABLE 2-12

WATER RESOURCES DATA FOR THE LITTLE LOST-BIRCH CREEK AREA
(Mean Annual Flows in Cubic Feet per Second)

Water Year	Birch Creek Near Reno 13117020	Birch Creek 8 Mile Canyon 13117030	Sawmill Creek Near Goldberg 13117300	Little Lost Near Wet Creek 13118700	Little Lost Near Howe 13119000
1961	80.7	------	23.6	32.2	49.3
1962	79.7	------	43.5	49.9	66.1
1963	70.0	------	41.0	45.6	56.4
1964	------	------	57.0	61.4	63.4
1965	------	------	77.2	97.3	90.7
1966	------	------	32.2	57.1	73.1
1967	------	------	54.8	76.2	81.2
1968	66.4	41.8	45.4	72.2	87.6
1969	65.5	46.1	60.4	87.3	103.0
1970	67.7	50.3	51.0	77.4	103.0
1971	73.7	49.2	70.2	89.7	105.0
1972	72.5	51.1	61.2	83.4	106.0
1973	72.4	50.5	37.3	56.3	82.2
1974	69.1	45.7	------	76.5	97.5
1975	79.0		------	86.6	98.9

Source: U.S. Geological Survey Water-Data Reports 1961-1975.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NATIONAL
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Jumpoff
FOREST
Sinks
BUTTE CO
JEFFERSON CO
Eight Mile Canyon
LABORATORY
Howe Peak
Legend
Private Land
County Line
Major Hard
Surface Road
INEL Boundary
Water Resources
Perennial Stream
Intermittent Stream
Spring
Well
Canal
Pipeline
Check Dam
Sink or Pond
Wetland
Instream Structure

Figure 2-9

Water Use

Total consumptive water use by wildlife is 250,836 gallons per year or .7 acre feet per year (ac/ft/yr), while livestock use 7,364,430 gallons per year or 22.6 ac/ft/yr. Consumptive water requirements by individual species are shown on Table 2-13.

TABLE 2-13

CURRENT CONSUMPTIVE WATER REQUIREMENTS
FOR LIVESTOCK AND WILDLIFE

Animal	Animal Months/Year	Gallons Per Animal Month	Total Gallons Required/Year	Acre-Feet/ Year
Deer	2,668	12	32,016	.1
Antelope	6,465	12	77,580	.2
Elk	1,177	120	141,240	.4
Sheep	5,851	30	175,530	.5
Livestock	23,963	300	7,188,900	22.1
Total			7,615,266	23.3

RECREATION

The BLM manages seven undeveloped recreation sites in the Little Lost Valley and three undeveloped sites in the Birch Creek Valley. The ES area contains no developed recreation sites.

The majority of the people recreating in the ES area are from the population centers along the Snake River in east and southeast Idaho and from the small communities of Howe, Arco, Moore and Darlington. Visitor use occurs year round but is concentrated from May through October because the roads are open, hunting and fishing seasons are open, and the weather is more suited for outdoor recreation.

Most visitors to the area are in groups of 3 or 4 people. Many come equipped with 4X4 vehicles, motorcycles and snowmobiles. Most use occurs on weekends and is concentrated along the main waterways. Most visitors stay two days. Because of the existing road system and limited shade, they camp as close to the water as possible. As a result, pollution occurs from camper sewage and in many instances, stream banks are trampled by recreational use to the extent that bank erosion and stream sedimentation occur.

Estimated Present and Projected Recreational Use in Visitor Days for ES Area*.

Activity	1977	1980 10% increase	1990 40% increase
Camping	15,800	17,380	22,120
Fishing	6,900	7,590	9,690
Hunting	6,269	6,895	8,775
Sightseeing	3,700	4,200	5,180
ORV	750	825	1,050
Picnicing-Hiking	450	495	630

Projections for this table are based on estimated population growth of Bonneville, Bannock and Bingham Counties (approximately 50%) as contained in the SEP. The assumption is made that 80% of current use in the ES area is from these counties. If this trend continues, a projected increase of about 40% will occur. Hunter days by species are shown in Table 2-14.

TABLE 2 - 14

HUNTER DAYS IN THE LITTLE LOST-BIRCH CREEK AREA

Species	Little Lost Drainage	Birch Creek Drainage	Total
Antelope	922	660	1,582
Deer	225	108	333
Cottontails	648	243	891
Coyotes	540	540	1,080
Doves	324	324	648
Ducks	108	90	198
Grouse	390	311	701
Jack Rabbits	135	135	270
Partridge	370	130	500
Pheasant	30	35	65
Total	3,692	2,576	6,269

CULTURAL RESOURCES

Identification

At the present time, 202 cultural resource sites have been documented in the ES area. 138 sites are located on Public Lands in the area, 45 sites on withdrawn lands in the INEL, 10 on Idaho State lands and 8 on privately owned lands. Both prehistoric and historic sites are found in the ES area. The prehistoric sites include surface campsites and workshops, rockshelters, pictograph panels, tipi rings, hunting blinds and rock alignments. Historic sites are represented by pioneer cemetaries, a freight station, abandoned cabins, and a recent Indian campground. A segment of the historic Nez Perce (Nee-Mee-Poo) Trail is located in the Birch Creek Valley. Associated with this trail is the Birch Creek Massacre Site, where Nez Perce warriors captured and killed five teamsters hauling supplies to the mines. This trail is presently being studied jointly by the Forest Service and the NPS for inclusion in the National Trails System as a National Historic Trail.

Of the 202 cultural sites in the ES area, the Birch Creek Rockshelters (4 sites) have been listed on the National Register of Historic Places and 192 sites are potentially eligible for nomination to the Register. The remaining six sites are either cemetaries or no longer identifiable and are therefore, not generally considered eligible for nomination to the National Register.

Summary of Known Cultural Resources

Appendix 2-12 contains a brief description of the known cultural resources in the area and identifies land ownership at the site.

Summary of Unknown Cultural Resources

The results of the 1976 random and non-random surveys and the 1967-69 archeological survey of the INEL indicate that about 600 prehistoric and historic sites exist in the area. One-third of these are known. An estimated two-thirds remain unknown.

VISUAL RESOURCES

Characteristic Landscape

Approximately 50 percent of the ES area lies within the physiographic region known as the Snake River Plain, and 50 percent is within the Northern Rocky Mountains province.

Landscape

Landform is a combination of the flat plains and the rugged mountains. This combination creates grass-covered plains and valley floors framed by short foothills and rugged mountain ridges. The vegation complex further diversifies the landscape by combining riparian habitat with steppe grasslands and forested mountains.

Surface water is relatively common in the northwestern 3/4 of the area. Numerous intermittent and perennial streams flow through the valleys. The overall visual quality of the ES area is quite high but not uncommon within the region.

Most cultural modifications have low visual impacts. The primary visual intrusions are utility distribution lines, out buildings, irrigation ditches and fences.

Visual Resource Management (VRM) Classes

Classes established for the ES areas are shown in Figure 2-10. Determination of these classes is described in Appendix 2-13. Each VRM class describes a different degree of modification allowed in the basic elements (form, line, color, and texture) of the landscape (Table 2-15). These classes are therefore the basis for determining whether or not a modification would result in a visual impact.

TABLE 2-15

VISUAL RESOURCE MANAGEMENT CLASS OBJECTIVES

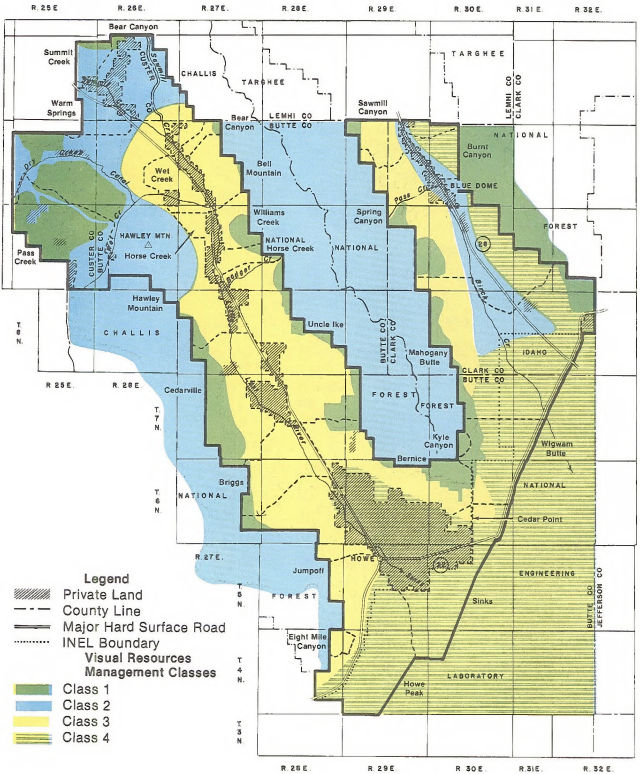
CLASS I - Natural ecological changes only. Primitive or natural area where management activities are restricted.

CLASS II - Changes in any of the basic elements; form, line, color, and texture should not be evident in management activity.

CLASS III - Changes in basic elements (form, line, color, texture) may be evident in management activity. But changes should remain subordinate to visual strength of existing character.

CLASS IV - Changes may subordinate original composition and character but must reflect what could be natural occurrence within character type.

CLASS V - Change is needed, naturalistic character disturbed to point where rehabilitation is needed to bring back in character to surrounding countryside. An interim short-term classification until one of the other objectives can be reached through rehabilitation or enhancement.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Briggs
NATIONAL
NATIONAL
Cedar Point
HOWE
ENGINEERING
Jumpoff
FOREST
Sinks
BUTTE CO
JEFFERSON CO
Eight Mile Canyon
LABORATORY
Howe Peak
Legend
Private Land
County Line
Major Hard Surface Road
INEL Boundary
Visual Resources Management Classes
Class 1
Class 2
Class 3
Class 4

Figure 2-10

WILDERNESS

Under section 603 of FLPMA, Congress gave BLM its first clear-cut mandate on how the Public Lands should be managed. Under this act, wilderness preservation is part of BLM's multiple use mandate. It continues by stating that lands being reviewed for wilderness will be managed in a manner so as not to impair the suitability of such areas for preservation as wilderness.

During the wilderness inventory and study period, existing multiple use activities may continue in the manner and degree that they were occurring when FLMPA was passed. New or expanded uses will be allowed if they will not impair the suitability of lands for designation as wilderness.

The wilderness review process has three phases: inventory, study, and submission of a report to Congress. Public involvement is provided for all phases of the process, with opportunity for comment, participation, and review. The phases are outlined below:

a. Inventory - First, BLM conducts an inventory of the Public Lands to identify areas that meet the definition of wilderness established by Congress. Such areas are identified as wilderness study areas (WSA's).

b. Study - Next, BLM studies each WSA, using the BLM land-use planning system to analyze all values, resources, and uses within the WSA. The findings of the study determine whether the area will be recommended as suitable or nonsuitable for designation as wilderness.

c. Reporting - When the study has been completed, a recommendation as to whether the WSA is suitable or nonsuitable for designation as wilderness is submitted through the Secretary of the Interior and the President to Congress. Reports on all WSA's must reach the President by October 21, 1991, and reach Congress by October 21, 1993.

Preliminary road inventories in the ES area have identified areas which are generally roadless in character. The larger areas are in the Hawley Mountain and Pass Creek Allotments with smaller areas located near the Forest Service boundaries. Most of these lands are contiguous to USFS areas identified as having potential for wilderness study in the RARE II Drafts.

To date, areas with wilderness characteristics have not been identified. The inventory is underway and is scheduled to be completed in July, 1980.

MINERAL RESOURCES

Mineral production in the ES area is minimal. Minor amounts of iron ore are extracted from Peterson Canyon, and sand and gravel are mined near most major roads. Exploration activity for uranium is occurring in Long Canyon (Birch Creek Valley) and North Creek (Little Lost Valley). Leasing activity indicates an interest in oil and gas, but no production or intensive exploration for any leasable mineral has yet occurred.

Historically, most production came from the Scott Mine, which produced lead, zinc, and silver. Most other mineral production came from mines on National Forests.

AIR QUALITY

The air quality of the ES area is good. Sporadic air quality sampling has been conducted by the DOE as part of their monitoring program. Particulate sampling at Howe showed suspended particulate matter with 24 hour concentrations ranging from 35 to 90 micrograms per cubic meter (ugm^3), which is well below the ISO ugm^3 Federal Secondary and state standard.

PALEONTOLOGICAL RESOURCES

The Little Lost-Birch Creek ES area has no identified paleontological resources of national landmark significance. Invertebrate fossils have been reported in all Paleozoic rocks in the planning unit. To date, no evaluation has been done on the significance of these fossils.

SOCIO-ECONOMICS

The ES area contains parts of four counties; Butte, Clark, Custer, and Lemhi. Custer and Lemhi counties have not been included in the economic portions of this ES because only a small fraction of each county is involved. However, Jefferson and Bonneville counties have been included because they serve as trade centers for the ES area.

The term "study area" as used in this section refers to Butte, Clark, Bonneville and Jefferson counties. The study area is much more commercialized and industrialized than the ES area which is primarily agrarian.

Population

From 1960 to 1970, the population of Butte and Clark counties declined while Bonneville and Jefferson counties increased. Overall populations increased approximately 8 percent. From 1970 to 1975, the populations in all four counties increased a total of 15 percent. Migration accounted for 2 percent of the total 1975 population increase (Table 2-16).

TABLE 2-16

POPULATION TRENDS

County	1960	1970	Percent Change 1960 - 1970	1975	Percent Change 1970 - 1975	Migration 1970-1975
Bonneville	46,906	52,457	+ 12%	58,123	+ 11%	+ 1.6%
Ammon	1,882	2,545	+ 35%	3,563	+ 40%	
Idaho Falls	33,161	35,776	+ 8%	37,042	+ 4%	
Butte	3,498	2,925	- 16%	3,200	+ 10%	+ 2.1%
Arco	1,562	1,244	- 20%	1,364	+ 10%	
Clark	915	741	- 19%	969[1]	+ 31%	+26.2%
Dubois	447	400	- 11%	499	+ 25%	
Jefferson	11,672	11,740	+ 1%	13,196	+ 12%	+ 3.7%
Rigby	2,281	2,324	+ 2%	2,821	+ 21%	
Study Area	62,991	67,863	+ 8%	75,488	+ 11%	+ 2.0%
State of Idaho	667,191	713,015	+ 7%	821,000	+ 15%	+ 8.9%

[1]From a special census in 1975

Sources: 1) Bureau of Land Management, Southeast Idaho Socio-Economic Profile, Harbridge House, Inc., March 1977
2) Bureau of the Census, Number of Inhabitants, Idaho, 1960, 1970
3) Bureau of the Census, Population Estimates and Projections, Series P-25, No. 660, April, 1977

Social Values and Attitudes

Nine ranchers in the ES area were interviewed, both by questionnaire and by telephone, in an attempt to identify the characteristics and attitudes of the ranching community. Although not a totally representative sample, these nine responses do give an insight into the characteristics and attitudes of ranchers in the ES area.

Among these nine ranchers, the average length of residence in the area was 41 years; one family has lived in the area since 1875; the most recent family in the area settled there in 1969.

These ranchers have been ranching for an average of 43 years with 36 of those years being in the ES area. The ranchers have an average of 3 children and they expect at least one of them to go into ranching. Most, 56 percent, expect one of their children to take over their ranch someday.

Most ranchers, 89 percent, have had relatives in ranching and most of their friends and associates are ranchers, 78 percent.

There have been several studies which have attempted to identify the sociological basis for western range livestock production. Two of these are of particular interest. In a study of southwest range livestock producers Martin and Smith (Martin 1968) found that perhaps maintaining the ranch as a way of life is more important to many ranchers than achieving the highest possible economic return from their resources. J. L. Schultz (Schultz 1970), in a study of eastern Oregon and Washington ranchers, found that 96 percent of the ranchers stated they felt rural living was superior in virtually every respect to living in an urban area. He also found that "many ranchers perceive few, if any benefits from participation in formally structured social groups." The ranchers in the Schultz study indicated (98 percent) that they are virtually the only remaining industry free of government intervention, and as a group, desire no federal subsidies. Schultz found, as did Martin, that ranchers viewed ranching as a "way of life" rather than a profit making enterprise. In addition, "95% also felt that they possessed particular qualities which differentiated them from members of other occupational groups, and such qualities were essential to securing social acceptance among other ranchers. Examples of these being: honesty, being hospitable, respectful of the rights of others to privacy and independence, etc."

The ranchers in the Little Lost-Birch Creek ES area exhibit many of the same qualities found by Schultz and Martin.

Ranching as a way of carrying on family tradition, was rated as one of the most important reasons the Little Lost-Birch Creek ranchers want to stay in ranching. Other reasons which were rated very highly were providing a place for children to have meaningful work and responsibility, providing an alternative to city life, being able to work outdoors, and being relatively free of supervision at work.

All nine ranchers felt that a ranch is a good place to raise children and that the management ability required in ranching develops both a sense of independence and the desire to get ahead in the world. Most ranchers feel that ranching provides a variety of recreational activities (89 percent) and that ranch ownership provides a basis for receiving tax advantages (67 percent). However, the ranchers did not feel that ranching provides an opportunity to make a good profit (78 percent) or that returns from livestock raising are higher than other investment opportunities (78 percent).

In order to be respected the ranchers thought the most important things were honesty, reliability, neighborliness, and involvement in community affairs.

The organizations to which the farmers belonged were for the most part agricultural in nature. The most mentioned organizations were the Woolgrowers and Cattlemans Associations, Soil Conservation Districts, Irrigation Districts, and the farm bureau. Only one respondent mentioned membership in a church, while two ranchers do not belong to any organizations.

A major employer in the area is the Idaho National Engineering Laboratory, commonly referred to as "the site". INEL is operated by the Department of Energy to conduct research into the efficient uses of nuclear power. There are 7,160 employees at the site (both Dept. of Energy and contractors) and another 2,110 in Idaho Falls. The "site" is located in the desert between Idaho Falls and Arco.

Income

The total personal income in the study area was $373.4 million in 1976. The farm sector accounted for $23.1 million and non-farm accounted for $350.3 million (Table 2-18).

Recreation and Wildlife

The estimated visitor days for hunting and fishing are shown in the recreation section of this chapter. A study conducted in northern Utah established the average daily expenditure for warm water fishing, waterfowl, upland game, and big game hunting (Utah Fish and Game - Division of Wildlife). By adjusting the data in that report to reflect inflation, 1977 average daily expenditures can be estimated. These figures are: Fishing - $32; Waterfowl hunting - $59; Upland game hunting - $45; and Big game hunting - $54. This data, combined with the visitor day data from the recreation section, can be used to estimate expenditures made in the study area as a result of hunting and fishing visitor days in the ES area.

Table 2-19 shows what those estimated expenditures would be.

TABLE 2-19

FISHING AND HUNTING EXPENDITURES
1977

Activity	Visitor Days in ES Area	Expenditures in Study Area
Fishing	6,900	$220,800
Hunting	6,269	302,067
Total	13,169	522,867

Data on expenditures for other types of recreation are not available at the present time.

Ranch Economics

The study area contains 1,270 livestock farms and ranches with total sales of $115.9 million, $86.9 million of which is crop sales.

BLM grazing permits and leases total 303 in the study area. Total AUMs (beef cattle and sheep) are 1,953,206. Total BLM AUMs are 116,405. Thus, BLM AUMs represent 6.0 percent of all AUMs in the study area (Table 2-20).

TABLE 2-18

PERSONAL INCOME BY MAJOR SOURCES
(1976)

($000's)

Industry	Bonneville	Butte	Clark	Jefferson	Total
Farm	$ 9,999	$ 4,088	$2,360	$ 6,611	$ 23,058
Non-Farm	$241,852	72,350	$2,184	$ 33,919	$350,305
Private	207,937	54,426	945	26,714	290,022
Ag. Serv., For., Fish & Others	927	(D)	102	641	(D)
Mining	589	0	(D)	0	(D)
Construction	35,301	(D)	0	2,027	(D)
Manufacturing	27,249	(D)	0	5,090	(D)
Non-Durable Goods	16,009	(D)	0	4,569	(D)
Durable Goods	11,240	(D)	0	521	(D)
Transportation and Public Utilities	15,769	(D)	305	888	(D)
Wholesale Trade	23,622	156	(D)	4,424	(D)
Retail Trade	37,838	(D)	336	3,312	(D)
Finance, Ins., and Real Estate	10,621	240	(D)	1,184	(D)
Services	56,021	50,379	(D)	9,148	(D)
Government and Government Enterprises	33,915	17,924	1,239	7,205	60,283
Federal, Civilian	12,277	371	717	681	14,046
Federal, Military	870	16,314	14	201	17,399
State and Local	20,768	1,239	508	6,323	28,838
Total	$251,851	$76,438	$4,544	$40,530	$373,363

(D) Not shown to avoid disclosure of confidential information, Data is included in totals.

Source: Personal Income by Major Sources 1971 - 1976, Regional Economics Information System, Bureau of Economic Analysis, July 1978.

TABLE 2-20

AGRICULTURAL SALES AND FEED ANALYSIS
(1974)

	Bonneville County	Butte County	Clark County	Jefferson County	Study Area	State of Idaho
All Ag. Sales ($1,000)	$ 58,425	$ 8,075	$ 7,406	$ 41,959	$115,865	$ 1,381,207
All Crop Sales ($1,000)1	$ 48,325	$ 4,267	$ 5,445	$ 28,957	$ 86,994	$ 8869,727
Livestock Farms and Ranches	524	146	60	540	1,270	14,185
BLM Permits & Leases	80	86	58	79	303	2,624
Beef Cattle						
Number	47,706	24,347	19,279	52,038	143,370	1,532,837
Total AUMs	572,472	292,164	231,348	624,456	1,720,440	18,394,044
BLM AUMs	3,723	36,453	34,059	10,754	84,989	894,624
Total Sales ($1,000)1	$ 5,993	$ 2,399	$ 1,521	$ 8,354	$ 18,267	$ 344,001
Sheep						
Number	37,837	22,890	9,372	26,887	96,986	644,290
Total AUMs	90,809	54,936	22,493	64,529	232,766	1,546,296
BLM AUMs	1,536	5,476	9,637	14,767	31,416	140,373
Total Sales ($1,000)1	$ 1,100	$ 493	$ 256	$ 1,058	$ 2,907	$ 26,134
Percent BLM AUMs of Total AUMs	0.8%	12.6%	17.2%	3.7%	6.0%	5.2%

[1]The addition of crop, beef cattle, and sheep sales may not equal all agricultural sales because hog sales are included in the total.

Source: Bureau of Land Management, Socio-Economic Data System, December, 1978.

In the ES area, 30 operators used 21,885 BLM Aums in 1977. Their authorized BLM AUMs was 29,864. Their total AUM needs (based on herd size) were 134,628. Thus, BLM supplied 16.2 percent of the total feed requirements for these operators. If the operators used all their active qualified AUMs, this would be 22.2 percent.

The BLM supplies 13.4 percent of the total feed requirements for smaller operators and 17.8 percent of the total feed requirements for intermediate sized operators in the Little Lost-Birch Creek ES area.

A recent study in Wyoming (Stevens 1975) determined that one man-equivalent of labor was required for every 314 animal units in a typical cattle operation. Based on this figure, ranch employment for the ES area is estimated to be 429.

Ranch budget interviews were conducted with ranchers in the ES area who had small, intermediate, and large ranching operations. For analysis purposes, the data were combined into two economic size classes: small cattle ranch-farms with limited sales of hay and/or grain; and intermediate sized cattle ranches with major sales of hay and grain. Average herd size (number of brood cows) for the two groups was 205 and 314 head, respectively. On the average, the bull-to-cow ratio approximates 1 bull to 25 cows for the small ranches and 1 to 20 on the intermediate ranches.

Economic size is based on brood herd size, livestock returns, and other agricultural sales or receipts. A few of the ranches included one or more flocks of sheep. The sheep AUMs were converted on a ratio of five sheep to one cow. Farm flock sheep herds occurred more in the small group than the intermediate group.

The data presented represents the mathematical averages of the ranch operations in each group, and thus eliminates any problems of disclosing data on any one operation. While the data may be viewed as average figures for each size class, they should not be construed as returns and expenses that would be encountered on an average ranch. No "average ranch" exists because unique factors are associated with each ranch operation and each rancher.

Input to the interview questionnaires (ranch budgets) included income tax records, ranch appraisal records, accountant-prepared earnings statements, and ranchers' best estimates. Contact was also made with agricultural finance institutions for comparison and for validation of data where "best estimates" were made.

The following tables list average costs and returns for Calendar Year 1977. Data collected from the one sheep rancher interviewed were not used since lack of data from other sheep operators presented disclosure problems. Data collected from one large cattle operation were also not used because of: the disproportionate size of operation (number of livestock and other agricultural product sales) in comparison with other livestock ranches; the affects of this ranch on the average costs and returns of other large ranches and their reciprocal effects; and disclosure problems.

Tables 2-21 and 2-22 describe the income statement for the small and intermediate sized operations in the ES area. The net ranch cash income is the amount of cash available to purchase new machinery and improvements, provide for living expenses of the ranch family, and retire or service any outstanding debts against land, improvements, livestock, and machinery.

Subtraction of depreciation from "net ranch cash income" gives the portion of returns available for mortgage payments and family living expenses. We have chosen to subtract an amount for operator labor at an average of 2,500 hours @ $3.25/hour.

The budgets include depreciation as a non-cash expense item. Special attention is necessary in order to fully understand these items.

The costs of real estate (land and improvements) and working capital (livestock, machinery, and equipment) may be deducted from net ranch income and the residual specified as the compensation, or return to the operator and his family for labor and management. Table 2-23 shows the actual returns for the "average" intermediate sized cattle ranch.

FUTURE ENVIRONMENT

This section describes the resources and land uses that would probably be found in the area in 15 years (1994) without implementation of the proposed action described in Chapter 1. The fifteen-year period was selected because the objectives of the proposed action would be expected to be met in that time.

No measureable changes from the existing situation are expected in climate, air quality, paleontology, topography, minerals, land use plans, controls, and constraints, and transportation networks.

SOILS

No measureable changes in the soil resource are anticipated as a result of future grazing use nor are mineral, agricultural or cultural activities expected to produce any measureable soil loss.

VEGETATION

Prior to 1956, seasons of use and livestock stocking rates were controlled by weather and available forage. Present stocking rates and seasons of use have been in effect in the ES area for the past 16 to 22 years. Present condition and trend are static to slightly improving so vegetation production in 1994 should not be measurably different from the present. Under current livestock management, the vegetation condition is not expected to change by 1994.

Uses of the vegetation in the ES area have been at about the same level for the last 15 years and are not anticipated to change much over the next 15 years.

TABLE 2-21

SUMMARY OF 1977 AVERAGE COSTS AND RETURNS FOR
FOUR SMALL SIZED CATTLE OPERATIONS IN THE LITTLE LOST-BIRCH CREEK
GRAZING ENVIRONMENTAL STATEMENT AREA 1/

	Average Small Ranches	Average Per Brood Cow
Returns		
Sale of Calves	$ 11,833	$ 58
Sale of Yearlings	22,748	110
Sale of Cull Cows/Bulls	10,984	54
Other Agri. Receipts	2,700	14
Gross Returns	47,995	234
Non Farm Income 2/	3,400	---
Cash Expenses		
Land Rent	754	4
Feed	1,484	7
Livestock Expenses (incl. Transportation)	772	4
Livestock Purchased	2,200	11
Insurance	741	4
Labor Expense	2,742	14
Taxes (Property & Income)	2,746	15
Seed & Fertilizer	1,281	6
Machinery Operation	3,058	15
Repairs	1,021	5
Utilities	2,628	13
Grazing Fees	850	4
Association Fees	1,033	5
Supplies	1,944	9
Miscellaneous Expenses	481	2
Interest Expenses	8,973	44
Total Cash Expenses	32,708	162

1/ Limited other Agricultural Products sold.

2/ Not included in Net Ranch Cash Income, or other calculations.

TABLE 2-21 (continued)

SUMMARY OF 1977 AVERAGE COSTS AND RETURNS FOR
FOUR SMALL SIZED CATTLE OPERATIONS IN THE LITTLE LOST-BIRCH CREEK
GRAZING ENVIRONMENTAL STATEMENT AREA

	Average Small Ranches	Average Per Brood Cow
Net Ranch Cash Income (Gross Returns minus Cash Expenses)	$ 15,287	$ 75
Less Non Cash Expenses:		
- Operators Labor (2500 hours @ $3.25)	(8,125)	(39)
- Depreciation	(24,241)	(118)
Plus Value of Perquisites	3,900	19
Adjusted Net Ranch Imcome	(13,179)	(64)
Change in Inventory (+ or -)	(11,360)	(55)
Net Ranch Income	(24,539)	(120)
Average Ranch Capital	616,802	3,009
Percent Return to Capital 3/	(3.9)	N/A
Acres	959	5
Herd Size (Brood Cows)	205	---
(Bulls)	8	---

3/ Net Ranch Income - Average Ranch Capital.

TABLE 2-22

SUMMARY OF 1977 AVERAGE COSTS AND RETURNS FOR
FIVE INTERMEDIATE CATTLE OPERATIONS IN THE LITTLE LOST-BIRCH CREEK
PLANNING UNITS, IDAHO FALLS DISTRICT, IDAHO 1/

	Average Five Ranches	Average Per Brood Cow
Returns		
Sale of Calves	$ 56,569	$ 180
Sale of Yearlings	49,737	158
Sale of Cull Cows/Bulls	7,470	24
Other Receipts	24,376	78
Gross Returns	138,152	440
Non Farm Income 2/	4,572	---
Cash Expenses		
Land Rent	150	---
Feed	1,520	5
Livestock Expenses (incl. Transportation)	1,098	3
Livestock Purchased	11,367	4
Insurance	1,814	6
Labor Expense	14,833	47
Taxes	7,420	24
Seed & Fertilizer	1,454	5
Machinery Operations	6,392	20
Repairs	4,115	13
Utilities	10,477	33
Federal Grazing Fees	3,509	11
Association Fees	131	---
Supplies	2,644	8
Miscellaneous Expenses	1,247	4
Interest Expenses	14,113	45
Total Cash Expenses	82,284	228

1/ Limited other Agricultural Products sold.

2/ Not included in Net Ranch Cash Imcome, or other calculations.

TABLE 2-22 (continued)

SUMMARY OF 1977 AVERAGE COSTS AND RETURNS FOR
FIVE INTERMEDIATE CATTLE OPERATIONS IN THE LITTLE LOST-BIRCH CREEK
PLANNING UNITS, IDAHO FALLS DISTRICT, IDAHO

	Average Five Ranches	Average Per Brood Cow
Net Ranch Cash Income (Gross Returns minus Cash Expenses)	$ 55,868	$ 212
Non Cash Expenses:		
- Operator Labor (2500 hours @ $3.25)	(8,125)	(26)
- Depreciation	-25,223	-80
Value of Perquisites	3,900	12
Adjusted Net Ranch Income	26,420	118
Change in Livestock Inventory (+ or -)	(1,938)	6
Net Ranch Income	24,482	78
Average Ranch Capital	1,406,961	4,481
Percent Return to Capital 3/	1.7	N/A
Acres	2,028	6
Herd Size (Brood Cows)	314	---
(Bulls)	16	---

3/ Net Ranch Income - Average Ranch Capital.

TABLE 2-23

RETURNS TO REAL ESTATE AND WORKING CAPITAL
INTERMEDIATE SIZED CATTLE (WITH OTHER AGRICULTURAL SALES)

Real Estate:	
Average Value of Buildings and Improvements	$ 169,300
Average Value of Land (Deeded)	972,245
Average Value - Grazing Permits 1715 AUM's @ $10	17,150
	1,158,695
	@ 8%
	$ 92,696
Working Capital:	
Average Value of Equipment	$ 133,700
Average Value of Livestock	110,300
	244,000
Interest Rate	@ 8%
	$ 19,520
Allocation of Net Ranch Income:	
Net Ranch Income	$ 24,482
Capital Costs:	
Real Estate	$ 92,696
Working Capital	19,520
	$ 112,216
Net Return to Management (Net Ranch Income - Capital Cost):	$ - 87,734

LIVESTOCK GRAZING

Over the next 15 years, livestock grazing in the ES area would probably remain unchanged. Cattle would continue to be the dominant domestic grazing animal with little change in numbers. Sheep operations are expected to either stabilize or continue the long-term downward trend. It is anticipated that in the future there would be requests to change the class of livestock from sheep to cows. Any request for a change in the class of livestock would be analyzed in an Environmental Assessment.

Few major range improvements for livestock management would be made in the area in the next 15 years. If sheep numbers do decrease in the ES area, cattle numbers may increase proportionately if conversion from sheep use to cattle use is allowed.

TERRESTRIAL WILDLIFE

Wildlife habitat condition is not expected to change any measureable degree. Areas near water would continue to receive heavy livestock use. Riparian areas would continue to provide habitat below potential. Wildlife population levels would continue to increase, but would remain below potential in areas where concentrated livestock grazing removes excessive amounts of forage and cover annually.

Areas without water would continue to provide non-competitive habitat to wildlife. Wildlife species requiring little water or mobile enough to obtain water from other sources would continue to utilize these areas undisturbed by livestock.

Because of livestock competition, big game objectives would not be met. Big game populations would continue to increase at the present rate until carrying capacity is exceeded. If hunting does not control populations, climatic conditions would cause mortality until populations become balanced with habitat carrying capacity.

Jumpoff allotment is of critical importance to wintering antelope in the Little Lost Valley. The migration route which allows passage from the valley to the desert below is restricted and antelope passage could be blocked by severe winter weather. This has happened in the past and would probably occur in the future.

Over-use of riparian zones would continue to reduce carrying capacity. Displacement and stress from physical and social interactions between livestock and wildlife in riparian areas would limit wildlife populations to levels below carrying capacity of these and adjacent habitats.

AQUATIC WILDLIFE

Aquatic habitat condition is expected to continue deteriorating at the present rate. Continued livestock concentration in riparian areas would widen stream channels, eliminate overstory vegetation, and weaken stream banks. The results would be reduced pool areas, reduced escape cover, shallower riffles and runs, silted spawning areas, higher water temperatures, reduced food organism production, and increased turbidity.

WATER RESOURCES

Water consumption in the ES area is not expected to increase measureably. Irrigation demands would increase only slightly as most arable lands are already developed to capacity. An increase in wildlife populations is expected, but the additional consumption of water would be small. Stream condition would change little, water quality would remain the same, and the availability of water for all uses would remain unchanged.

RECREATION

Camping, picnicing, hiking and other recreation activities occurring in this area would suffer due to minor decreases in scenic values and minor conflicts with livestock.

Water quality would decline as a result of sedimentation, stream bank erosion and pollution from camper sewage. As a result, if steps are not taken to control recreationists, water quality could be affected and, in turn, fishing success and fishing days would decline.

The total recreation days projected from present data would be 47,359 annually (a 40 percent increase).

Birch Creek, Wet Creek, Big Spring Creek, and portions of the Little Lost River support the highest fish populations and receive the greatest fishing pressure.

Recreational use associated with the streams is about 33,800 user days per year. Of this use, 6,900 are fisherman days (a fisherman day is defined as one person fishing for twelve hours).

VISUAL RESOURCES

By 1990, the VRM class objectives would be subject to change. Areas currently being adversely impacted by livestock would continue to deteriorate, thus decreasing the visual quality.

The other multiple use activities presently occurring are compatible with the resource base and should not create any changes in VRM classes.

CULTURAL RESOURCES

Cultural resources would continue to disappear and deteriorate unless an effective cultural resource management plan (or plans) is developed for the Little Lost-Birch Creek Planning Unit, and implemented. Such a plan would list the salvage excavations, stabilization projects and monitoring efforts needed to protect the ES area's cultural sites. Although some sites may be destroyed or damaged, either inadvertantly or by vandals, new sites will be discovered and recorded during Class III, or intensive surveys of individual project areas. Severe surface damage will occur to sites not identified by Class III surveys. All potentially eligible cultural sites will be nominated, on an individual or group basis to the National Register of Historic Places.

WILDERNESS

Under provisions of the Federal Land Policy and Management Act of 1976, the lands in the ES area will have been reviewed to determine their potential and suitability for preservation as wilderness by 1985. Recommendations to the President will have been made regarding such preservation. Present on-going land uses can continue as long as they do not cause undue damage to wilderness resources. Wilderness values would remain unchanged from the present situation.

SOCIO-ECONOMICS

The population of the four county study area is projected to reach 106,451 by 1995. This constitutes an average annual population increase of 2.0 percent from 1980-1995. Butte and Clark counties should grow much slower, however, with both counties experiencing annual population increases of less than 1 percent (Table 2-24).

Total employment in the study area is projected to rise to 46,800 people by 1995. Compared to the 1975 level of employment, this constitutes a 2.3 percent average annual increase. By 1995, the three industries with the largest 1975 employment would still be the three largest employers. These industries were services, wholesale and retail trade, and state and local government. The fourth largest employer in 1975, agriculture, would drop to ninth by 1995 as the study area follows the national trend of decreasing employment in the agricultural sector (Table 2-25).

Other indicators (income, agricultural sales, etc.) should follow the pattern expected for population and employment in the study areas.

TABLE 2-24

POPULATION PROJECTIONS
1980-1995

County	1980	1985	1990	1995	Annual Increase 1980-1995
Bonneville	64,029	70,368	77,424	84,153	2.1%
Butte	2,937	2,953	2,960	2,966	.1%
Clark	747	782	798	803	.5%
Jefferson	14,303	15,737	17,235	18,529	2.0%
Totals	82,016	89,840	98,417	106,451	2.0%

Source: Poulation and Employment Forecast - State of Idaho Series 2 - Projections 1975-2000, Idaho Department of Water Resources and Boise State University - Center for Research, Grants, and Contracts, July 1978.

TABLE 2-25

EMPLOYMENT PROJECTIONS

Industry	COUNTIES									
	Bonneville		Butte		Clark		Jefferson		Total	
	1985	1995	1985	1995	1985	1995	1985	1995	1985	1995
Agriculture	884	575	265	226	101	89	837	663	2087	1553
Mining	59	75	-	-	6	6	-	-	65	81
Construction	2067	2435	62	64	-	-	135	165	2264	2664
Food and Kindred	1325	1320	3	3	-	-	687	986	2015	2309
Wood Products	156	245	14	14	-	-	-	-	170	259
Other Manufacturing	1215	1564	2	2	-	-	88	150	1305	1716
Trans, Comm., Util.	1256	1635	9	10	9	10	57	65	1331	1720
Wholesale and Retail sale	9566	11536	260	270	81	87	1490	1762	11397	13655
Home, Insurance Real Estate	1179	1508	20	21	-	-	138	178	1337	1707
Services and Misc.	11232	13900	109	119	-	-	1285	1712	12626	15731
State and local Government	2751	3244	268	285	107	121	917	1007	4043	4657
Federal Gov't.	582	611	26	28	50	57	35	34	693	730
Totals	32279	38653	1042	1048	356	373	5674	6726	39351	46800

Source: Population and Employment Forecast - State of Idaho, Series 2 - Projections 1975-2000 Department of Water Resources and Boise State University - Center for Research, Grants, and Contracts, July 1978.

CHAPTER 3
ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION

CHAPTER 3

ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

INTRODUCTION

This chapter is an impact analysis of the proposed action upon the various resources. Both short and long term impacts have been analyzed.

Short term is five years or the period of time necessary to implement the grazing systems and allow all allotments to go through one full cycle of the grazing system. Completion of all range improvements and vegetation manipulation projects would also be in the short term.

Long term is 15 years or the period of time necessary to reach the objectives of the proposed action. Throughout the impact analysis, the proposed level of livestock grazing is compared to active grazing preference and 1977 active use.

The proposed action would result in no significant impacts to climate, air quality, paleontology,,topography, geology, mineral resources, land use plans, controls, and constraints, threatened and endangered animal species, or transportation networks.

IMPACT ON VEGETATION

I. Introduction

The primary impacts to vegetation as a result of grazing are: Reduced vigor caused by early spring grazing, complete defoliation of plants caused by repeated grazing throughout the growing season, or by over use or under use of vegetation due to poor distribution of grazing animals.

The total impact to vegetation as a result of grazing is measured by changes in:

Trend - The increase or decrease of various plants in the vegetative community which would result in changes in that community either approaching or moving away from the potential natural plant community for the site.

Production - The new growth of vegetation each year or that portion of the new growth that can be used as forage without undue damage to the major forage plants.

Condition - The measure of a particular plant community as it relates to the potential natural plant community that could be present on a given site.

The following listed components of the proposed action would result in impacts to vegetation on the ES area.

II. Effect of Proposed Action Components on Vegetation

A. Season of Use - Forage plants depend on adequate carbohydrate reserves to start growth in the spring. When spring growth starts about 50% of the carbohydrate reserves are used in order to produce the first 10% (Cook 1966) of the annual growth. Grazing during the spring, when plants are drawing heavily on root storage, can deplete carbohydrate reserves and leave the plant low in vigor. Typical grass species cease to deplete and start to build root reserves at about the four leaf emergence stage (Cook 1966).

In the ES area, phenology studies have indicated that on the average year important forage species have not developed sufficiently (4 to 5 leaf stage) to support grazing prior to May 1 in the lower elevations and May 16 in the higher elevations (USDI, 1977 and 1978). Under the proposed action no allotment would be grazed prior to the selected dates.

In order to meet the phenological requirements, spring turnout dates were set back from 10 to 60 days on 17 of the 24 allotments totaling 248,645 acres (see Table 3-1).

On Hawley Mountain allotment, the proposal calls for turnout of 35 head of livestock 15 days (17 AUMs) prior to range readiness. However, because this use is less than 1% of the total allotment use and because the use would be rotated annually under the grazing system, the adverse impacts would be unmeasurable.

The later turnout date would allow plants to develop adequate photosynthetic tissue needed to be self sustaining and not be dependent on root reserves. The later turnout would allow the plants an opportunity to buildup the tissue needed to produce seed and generally provide the opportunity to have a more vigorous plant community. With the exception of Hawley Mountain allotment (as noted above) no allotment will be grazed by livestock prior to proper phenologic development of the vegetation.

B. Grazing Systems - Three types of grazing systems are proposed: Deferred Grazing would be implemented on 10 allotments containing 183,883 acres, Rest rotation grazing would be implemented on 7 allotments containing 181,232 acres and Seasonal grazing would be implemented on 7 allotments containing 33,125 acres.

Deferred Grazing Systems are designed so that livestock would not graze the same pasture during the early growing season of forage plants in two succeeding years. For example, on a three pasture deferred system a particular pasture would be grazed in the spring in year one, the summer on year two and the fall on year three. By installation of a deferred system (3 pasture) 1/3 of the allotment would not be grazed until early summer and 1/3 of the allotment ungrazed until the early fall season. The spring grazing use on the succeeding year would be made on the pasture that received fall use the year before. The treatments would vary depending on number of pastures in a deferred system or variance in size of pasture in the allotment. Utilization would not exceed 50 percent of the available forage in the pasture grazed.

TABLE 3-1

EXISTING AND PROPOSED SPRING TURNOUT DATES FOR LIVESTOCK

Allotment	Existing Spring Turnout Date	Proposed Spring Turnout Date
Deferred		
Bear Canyon	5/16	5/16
Bell Mountain	5/1	5/16
Bernice	4/16	5/1
Horse Creek	5/1	5/16
Cedarville	5/1	5/1
Howe Peak	4/16	5/1
Mahogany Butte	4/20	5/1
Sinks	4/21	5/1
Wet Creek	5/1	5/16
Wigwam Butte	4/1	5/1
Rest-Rotation		
Hawley Mountain	5/1	5/1
Jumpoff	4/20	5/1
Pass Creek	5/16	5/16
Spring Canyon	5/1	5/16
Uncle Ike	5/1	5/1
Warm Springs	5/1	5/16
Williams Creek	5/1	5/16
Seasonal		
Briggs Canyon	5/1	5/10
Burnt Canyon	7/16	7/16
Cedar Point	4/22	No Spring Use
Eight Mile Canyon	5/1	No Spring Use
Kyle Canyon	4/16	6/16
Sawmill	5/7	7/16
Summit	7/1	7/1

A delayed turnout date (for range readiness) coupled with deferred rotation grazing would allow forage plants to strengthen and in any one year allow two thirds of the allotment to mature before being grazed and one third of the allotment develop a good seed crop prior to being grazed. Overall range condition would improve from the increased vigor of plants and seedlings established from seed production of forage plants during the treatment cycles.

Rest rotation Grazing Systems are designed so that one portion of the allotment (2 pasture) would not be grazed at all during one years grazing treatment. Part of the grazing treatment would allow for deferment at a portion of the allotment during the early growing season also. For example a four pasture rest rotation grazing system would allow one pasture (1/4 of the allotment) complete rest for the year, 1/4 of the allotment would be grazed during the spring, 1/4 during the summer and 1/4 during the late or fall season. The grazing time sequence would be established to provide the turning of livestock into one of the pastures after the seed on forage plants is ripe or ready for planting. The livestock grazing that allotment would assist in trampling seed into the soil. The pasture where the seed is trampled would be rested the next year and not grazed until late in the season the following year to allow seedlings started from the seed trampling treatment to become established (Stoddard & Smith, 1955 and Hormay, 1970). Utilization of pastures in some cases would be 60 percent in a rest rotation system (see standard operating procedure No. 19 on initiating rest rotation systems on range in less than good condition).

A delayed turnout date (for range readiness) coupled with rest rotation grazing would allow forage plants to gain vigor, produce seed, plant seed and provide rest for seedling establishment. This would lead to improvement of range condition overtime.

Seasonal grazing systems are designed so that grazing damage to plants would be minimized. Utilization would not exceed 50 percent of the forage during the grazing year. The change to later turnout dates for livestock and lower stocking rate would maintain the range in at least the present condition. Seasonal grazing systems are planned on allotments which are small and unmanageable under any other type of grazing system. The allotments selected for seasonal grazing are generally in fair to good condition.

C. Range Improvements

Range improvements would make potentially suitable range into suitable range by providing livestock water. Install fences to initiate the deferred and rest rotation grazing systems. Better distribution of livestock would result from these improvements.

Under present management, grazing is placing a heavy impact on vegetation in many areas. This impact is caused because the lack of range improvements makes it impossible to keep livestock from concentrating in areas where water, slope and feed conditions are attractive. In order to distribute the grazing pressure over all grazeable portions of the ES area, the following type of range improvements are planned.

Water developments - would consist of constructing spring developments, pipelines, water troughs, reservoirs and storage tanks (see Table 3-2) to make water available in areas now considered to be unsuitable for livestock grazing due to lack of water. The planned water developments will allow livestock grazing on 155,817 acres that are presently receiving only limited use. The areas presently designated potentially suitable but which will become suitable with water development are generally in good to excellent condition and would therefore, place much additional forage within reach of livestock. This would have the overall impact on vegetation of allowing grazing pressure to be distributed over an area one and one half times as large as that now regularly used by livestock. (For a summary of Range suitability see Table 3-3).

Fence construction - this would consist of constructing fence to divide allotments and to make pastures within allotments, and to protect riparian vegetation. The short term result of fence construction would be to disturb 186.6 acres of vegetation through mechanical injury during the construction process. The long term impact of fencing on vegetation would be to distribute grazing pressure evenly over grazed areas and to allow grazing treatments to be implemented. These factors would reduce the impact of grazing on vegetation and allow vegetation time to recover from the effects of grazing. Fencing of riparian areas would remove all livestock use and would allow the riparian vegetation to rapidly reach natural potential on these highly productive sites. Fencing of riparian areas would protect approximately 146 acres of stream side vegetation from livestock grazing.

TABLE 3-2

EXPECTED ACREAGE DISTURBED BY PROPOSED IMPROVEMENT

Range Improvements	Unit	Total	Acres Disturbed Per Unit Short Term[a]	Long Term[b]	Total Acres Disturbed Short Term[a]	Long Term[b]
Fencing	Miles	93.3	2.0	0	186.6	0
Water Developments						
Spring Developments	No.	3	0.5	0	1.5	0
Water Pipelines	Miles	72.5	1.2	0	87.0	0
Water Troughs	No.	45	0.1	0.1	3.9	3.9
Reservoirs	No.	6	0.0	.5	0	3.0
Storage Tanks	No.	1	1.0	1.0	1.0	1.0
Brush Beat and Seed	Acres	10500	1.0	0	10500	0
Interseed	Acres	5500	1.0	0	5500	0
Burn	Acres	7000	1.0	0	7000	0

a. Short term disturbance is two or three years.
b. Long term disturbance is permanent.

D. Vegetation Treatments - There are portions of the ES area that have high production potential due to soil and natural moisture availability but that are presently producing little forage due to the dense over story of sagebrush. These areas are planned for one of the following proposed types of vegetation treatment. (See Appendix 3-1 for an explanation of how the expected productivity for each treatment was determined).

TABLE 3-3

SUMMARY OF RANGE SUITABILITY

Allotment	SUITABLE		POTENTIALLY SUITABLE		UNSUITABLE	
	Present	Future	Present	Future	Present	Future
Bear Canyon	3,043	3,185	142	0	353	353
Bell Mountain	6,633	6,633	0	0	0	0
Bernice	8,394	19,284	10,890	0	3,403	3,403
Horse Creek	3,280	5,448	2,168	0	111	111
Cedarville	6,093	16,707	10,614	0	2,948	2,948
Howe Peak	0	27,708	27,708	0	3,778	3,778
Mahogany Butte	18,882	49,304	30,422	0	3,147	3,147
Sinks	0	17,605	17,605	0	2,176	2,176
Wet Creek	5,921	6,397	476	0	409	409
Wigwam Butte	4,433	13,605	9,172	0	1,682	1,682
Sub Totals	56,679	165,876	109,197	0	18,007	18,007
Hawley Mountain	53,741	66,639	12,898	0	5,016	5,016
Jumpoff	2,642	5,282	10,274	7,634	1,761	1,761
Pass Creek	13,282	15,973	2,692	0	1,975	1,975
Spring Canyon	17,763	34,045	16,282	0	2,960	2,960
Uncle Ike	22,298	25,815	5,017	1,500	557	557
Warm Springs	6,510	6,577	67	0	134	134
Williams Creek	4,451	4,934	483	0	429	429
Sub Totals	120,687	159,265	47,713	9,134	12,832	12,832
Briggs Canyon	10,724	14,544	3,820	0	147	147
Burnt Canyon	4,171	5,656	1,485	0	57	57
Cedar Point	968	1,057	89	0	217	217
Eight Mile Canyon	0	960	960	0	724	724
Kyle Canyon	445	492	47	0	219	219
Sawmill	3,679	5,256	1,576	0	584	584
Summit	2,798	2,862	64	0	354	354
Sub Totals	22,785	30,827	8,041	0	2,302	2,302
Totals	200,151	355,968	164,951	9,134	33,141	33,141

Roto beating - this would reduce brush cover and allow more grass and forb production. Planned roto beating projects will be designed in an attempt to remove no more than 80% of the brush cover. Roto beating would be done on 2,500 acres of existing seeding where sagebrush has invaded. It is expected that an increase of 313 AUMs which can be used by livestock will result from roto beating existing seedings (Hull & Clomp, 1974) (Table 3-4).

Roto beating, followed by seeding, would be done on 8,000 acres of native sagebrush to reduce brush cover to 10 to 20% and would result in an increase of 1,172 AUMs which could be used by livestock (Table 3-4).

Burning would be done on 2,000 acres of existing seeding and on 5,000 acres of native brush and would change the vegetative aspect from brush to grass and forbs. Burning of existing seedings would result in an increase of 250 AUMs that could be used by livestock (Hull & Clomp, 1974). Burning of native brush would result in an increase of 838 AUMs that could be used by livestock (Table 3-4).

Interseeding would reduce brush cover and would be done on 5,500 acres. Interseeding would result in an increase of 293 AUMs that could be used by livestock.

Generally, vegetative treatments would have a high negative impact on vegetation during the short term. However, during the long term, the negative impact would decline as treated areas move toward the natural potential plant community.

E. Level of Stocking - stocking levels would be changed to bring the stocking rate into line with the forage producing capacity of each allotment. The stocking rates on 13 allotments would be adjusted downward from between 3% to 77% on 145,304 acres (see Table 1-6 for specific reductions by allotments). These adjustments would provide for grazing at an intensity that would allow the biological needs of the vegetation to be met. Four allotments would receive increases in stocking rates of between 1% and 51% on 102,862 acres (see Table 1-6). In allotments where the stocking rates would be increased, there is excess forage beyond the present needs of wildlife and livestock. Additional forage will be made available as potentially suitable forage becomes suitable forage through development of water. Under the proposed action, the stocking rate (wildlife plus livestock) would not exceed the forage production on any allotment at any season of the year. Therefore, impacts to vegetation as a result of stocking rate would be minimized.

Summary of the Impact of the Components of the Proposed Action on Vegetation.

TABLE 3-4

LAND TREATMENT METHODS AND USEABLE FORAGE INCREASES BY ALLOTMENT

Treatment	Allotment	Treated Acres	Present Useable Forage Production	Useable Forage After Treatment	Increase In Total Useable Forage
Roto Beating Of Existing Seedings	Pass Creek	1,500	100 Pounds/Acre	200 Pounds/Acre	188 AUMs
	Warm Springs	1,000	100 Pounds/Acre	200 Pounds/Acre	125 AUMs
Roto Beating Of Sagebrush Followed By Seeding	Spring Canyon	4,500	35 Pounds/Acre	150 Pounds/Acre	647 AUMs
	Pass Creek	3,000	40 Pounds/Acre	160 Pounds/Acre	450 AUMs
	Williams Creek	500	40 Pounds/Acre	160 Pounds/Acre	75 AUMs
Burning Of Existing Seeding	Howe Peak	2,000	100 Pounds/Acre	200 Pounds/Acre	250 AUMs
Burning Of Native Sagebrush	Howe Peak	5,000	26 Pounds/Acre	160 Pounds/Acre	838 AUMs
Interseeding	Jumpoff	4,000	0 Pounds/Acre*	50 Pounds/Acre	250 AUMs
	Briggs Canyon	1,500	27 Pounds/Acre	50 Pounds/Acre	43 AUMs
		23,000			2,866 AUMs

*Present forage production is less than 32 acres per AUM. Therefore this is unsuitable range and is not available for allocation.

Aums from these seedings (1,683 AUMs) would be used to reinstate authorized use or part of it on these allotments. The other 1,183 AUMs could be used for future allocations to livestock above the active preference.

Under the proposed action the spring turnout dates were set back from 10 to 60 days on 17 of 24 allotments so livestock grazing would not occur in the ES area until the major forage plants (primarily grasses) are in the 4 to 5 leaf stage. Typical grass species start to build root reserves at about the four leaf emergence stage (Cook, 1966).

The level of stocking would be adjusted to bring the total grazing use in line with the forage production in every allotment.

Grazing systems would be designed to allow the vegetation periodic relief from grazing to allow the phenological and biological development stages of important species to be completed. Willard and Herman (1977), in Montana, indicated that generally, rest rotation grazing allowed for better vigor of key forage species, faster soil water infiltration, more litter and greater production of desirable forage grasses. Owensby, Smith and Kling (1973), in Kansas reported similar findings. Thus, 183,883 acres in the 10 allotments scheduled for rest rotation would be expected to improve in range condition (higher computation of desirable grasses) and produce more livestock forage.

Deferred grazing systems on 181,232 acres and 17 allotments are expected to produce similar results. Martin (1973), found in Arizona that spring and summer rest two years out of three increased perennial grasses more than season long grazing. Reardon and Merrill (1976), reporting on a 20 year study in Texas, suggested than deferred rotation allows the better forage plants to become more vigorous and numerous than continuous grazing.

Seasonal grazing would occur on 33,128 acres in 7 allotments. These allotments are generally in fair and good condition. Rogler (1951); Hyder and Sawyer (1951), found continuous grazing to work best when grazing is at the proper stocking rate and the range is in excellent condition. Five of the seven allotments would be reduced to graze at the proper stocking rate. Range improvements (water developments) would increase the area available for livestock grazing on the other two allotments to allow an increase from the persent level of stocking. By keeping the level of livestock grazing in line with the annual forage production, these allotments are expected to at least maintain the present condition and possibly improve in range condition.

Range improvements (primarily fencing and water developments) are planned to get better distribution of livestock grazing within the allotments. As a result of developing additional water facilities, 155,817 acres would be made available that receive little or no grazing by livestock at the present time.

Vegetation treatments are planned to make areas of range in poor condition but that have good production potential into productive range.

Vegetation manipulation on 23,000 acres would increase the forage available by 2,553 AUMs.

III. Conclusion

The total overall impacts of the proposed action on vegetation would be measured by changes in condition, trend and production. As a result of the actions proposed, it is expected that the following changes would occur over the 15 year period.

Condition - A condition change of one condiiton class upward would seem reasonable in 15 years on range scheduled for rest rotation and deferred grazing that was utilized (suitable for livestock grazing) in the past. Range made suitable by water development would be expected to remain in the present condition class. Range under seasonal grazing would change (generally better) but not in the magnitude of range under rest rotation and deferred systems.

Leithead (1960), found that on a bunchgrass-sagebrush range of 8,450 acres that 82 percent changed one condition class as a result of deferred rotation grazing for 10 years.

Heady (1961), showed the most commonly stated benefit to be improved range condition resulting from increased plant vigor and seed production and from the establishment of more seedlings of desirable species.

Hyder and Sawyer (1951), reported an increase in climax bunchgrass plants from using a deferred rotation system. Hubbard (1951), obtained improved range condition with a deferred rotation system.

Another study that was used as a basis for predictions is an evaluation of the Morgan Creek AMP (Unpublished and available at the Salmon District BLM) which is 50 miles west of the ES area within the same general elevational range, precipitation zone and has similar vegetational types.

The Morgan Creek allotment has been under a rest rotation system since 1969 (BLM, 1977). Overall utilization levels for Morgan Creek are not known and no permanent livestock adjustments were made when the system was started.

The pre-system condition of the Morgan Creek allotment was largely poor to fair.

The Morgan Creek Study showed an increase in the percent composition of key species from 20.4% to 25.6% in only five years (Morgan Creek AMP Evaluation).

The proposed action is expected to result in the following condition class changes over the 15 year period: Excellent condition from 2,766 acres to 69,306 acres; good condition range from 135,508 acres to 142,078 acres; fair condition range from 112,498 acres to 76,282 acres; and poor condition range from 102,588 acres to 52,194 acres. Over the whole ES area, 143,372 acres would be improved by one condition class (Leithead, 1960). For specific projections on changes in vegetation condition see Table 3-5.

TABLE 3-5

PRESENT ECOLOGICAL VEGETATION CONDITION AND FUTURE ECOLOGICAL CONDITION

AFTER 15 YEARS UNDER THE PROPOSED ACTION

Allotment	Excellent		Good		Fair		Poor	
	Future	Present	Future	Present	Future	Present	Future	Present
Deferred								
Bear Canyon	1,647	-----	1,606	1,904	12	1,361	-----	-----
Bell Mtn.	4,288	-----	1,689	4,210	656	1,893	-----	530
Bernice	2,793	174	10,061	9,234	5,423	5,832	2,328	5,365
Horse Creek	173	-----	3,536	818	583	3,204	110	380
Cedarville	2,620	-----	6,750	7,916	-----	638	4	820
Howe Peak	698	698	10,931	5,931	3,263	3,263	10,543	15,543
Mahogany Butte	80	-----	15,221	8,804	24,800	19,139	10,343	22,501
Sinks	-----	-----	2,311	2,311	2,520	2,520	14,409	14,409
Wet Creek	591	-----	3,188	-----	1,017	3,909	301	1,188
Wigwam Butte	2,021	-----	4,001	4,724	5,959	4,445	2,293	5,105
Sub Totals	14,911	872	59,294	45,852	44,233	46,204	40,331	65,841
Rest Rotation:								
Hawley Mtn.	28,796	644	31,525	43,258	2,615	16,681	-----	2,353
Jumpoff	2,433	-----	2,686	3,665	2,245	3,309	1,511	5,901
Pass Creek	5,059	271	7,644	7,584	-----	4,537	-----	3,311
Spring Canyon	711	711	12,377	12,377	10,564	10,564	7,119	11,619
Uncle Ike	3,978	-----	13,764	3,811	7,502	15,517	2,226	8,142
Warm Springs	2,125	-----	2,011	2,626	-----	1,510	-----	-----
Williams Cr.	-----	-----	1,724	-----	2,627	3,860	295	1,286
Sub Totals	43,102	1,626	71,731	73,321	25,553	55,978	11,151	32,612
Seasonal:								
Briggs Cyn.	2,842	-----	5,461	3,415	4,826	8,083	-----	3,131
Burnt Cyn.	1,892	268	2,592	4,123	447	248	-----	292
Cedar Point	-----	-----	799	799	45	45	325	325
Eight Mile	-----	-----	31	31	936	936	387	387
Kyle Canyon	445	-----	105	550	-----	-----	-----	-----
Sawmill	4,071	-----	1,295	5,366	-----	-----	-----	-----
Summit	2,043	-----	770	2,051	242	1,004	-----	-----
Sub Totals	11,293	268	11,053	16,335	6,496	10,316	712	4,135
Totals:	69,306	2,766	142,078	135,508	76,282	112,498	52,194	102,588

*Figures derrived by totaling acres of suitable Range by vegetation type by condition class in the allotment folders. Given that only suitable range is expected to improve. Future condition totals are less than present condition totals because of 13,500 acres of new proposed seedings.

Trend - A change in condition establishes the trend. To predict the changes in trend that would occur under the proposed action, all changes in condition were tabulated. All acreages which raised in condition class were listed in upward trend. All other acreages were listed in static trend.

The 837 acres currently in downward trend would change to upward trend. Acres in stable trend would go from 163,559 to 211,673. Acres in upward trend would go from 211,673 to 164,396. Generally it is expected that the areas presently in downward trend would be stabilized, the areas presently in stable condition would change to upward trend and the areas presently in upward trend would stabilize at good or excellent condition (Heady, 1961). See Table 3-6 for predicted trend changes by allotment.

Production - As a result of increased vigor of forage plants and establishment of new forage plants under the grazing systems, it is estimated that the proposed action would increase total annual production. Annual available forage in 15 years would increase from 30,093,600 pounds to 41,146,400 pounds (see Appendix 3-2 for explanation of process used to predict forage increases). See Table 3-7 for changes in total biomass and available forage. All predictions of future production were based on the potential productivity of the soils described in each ecological site description (see Appendix 2-2). Table 3-8 identifies the potential use of the additional forage. The wildlife and livestock grazing sections of this chapter also discuss potential use of this additional forage.

Other studies used to predict the beneficial impacts of the proposed action are (Gibbons and Fisher, 1975; Johnson, W.M., 1965). Both of these studies were done in an area of Wyoming, having similar precipitation and soils.

Changes in condition, suitability and trend are summarized in Table 3-9.

IV. Threatened and Endangered Plants

Formal consultation under Section 7 of the Endangered Species Act of 1973 has been completed with the U.S. Fish and Wildlife Service on the endangered, threatened and rare plants discussed in Chapter 2.

No detrimental impacts are anticipated as a result of the proposed grazing treatments in the area. Improved range land condition resulting from periodic rest or deferment could have a positive impact in the long term.

IMPACT ON SOILS

Water Erosion Potential and Sediment Yield

The projected range ecological condition class improvement on 143,372 acres would not materially affect the erosion and sediment yield of the watershed. Plant composition vigor would improve, but total production, density and ground cover would change little (Table 3-2). The changes in the vegetation and runoff factors would be so slight that changes in erosion and sediment yield could not be reliably predicted (Appendix 2-10).

TABLE 3-6

PRESENT APPARENT TREND AND EXPECTED TREND AFTER 15 YEARS
(Federal Acres)

Allotment	UPWARD TREND		STABLE TREND		DOWNWARD TREND		DOUGLAS FIR AND ROCK OUTCROP	Total
	Future	Present	Future	Present	Future	Present		
Bear Canyon	0	3,265	3,265	0	0	0	273	3,538
Bell Mountain	0	6,633	6,633	0	0	0	0	6,633
Bernice	6,238	14,367	14,367	6,238	0	0	2,082	22,687
Horse Creek	2,439	2,999	2,999	2,439	0	0	121	5,559
Cedarville	0	18,147	18,147	0	0	0	1,508	19,655
Howe Peak	17,612	10,366	10,366	17,612	0	0	3,508	31,486
Mahogany Butte	33,833	16,611	16,611	33,833	0	0	2,007	52,451
Sinks	12,899	6,341	6,341	12,899	0	0	541	19,781
Wet Creek	471	5,846	5,846	471	0	0	489	6,806
Wigwam Butte	7,074	7,200	7,200	6,237	0	837	1,013	15,287
Sub Totals	80,566	91,775	91,775	79,729	0	837	11,542	183,883
Hawley Mountain	14,194	53,095	53,095	14,194	0	0	4,366	71,655
Jumpoff	10,228	3,157	3,157	10,228	0	0	1,292	14,677
Pass Creek	11,605	5,789	5,789	11,605	0	0	555	17,949
Spring Canyon	10,426	24,845	24,845	10,426	0	0	1,734	37,005
Uncle Ike	16,598	10,872	10,872	16,598	0	0	402	27,872
Warm Springs	4,478	2,231	2,231	4,478	0	0	2	6,711
Williams Creek	3,623	1,523	1,523	3,623	0	0	217	5,363
Sub Totals	71,152	101,512	101,512	71,512	0	0	8,568	181,232
Briggs Canyon	9,548	5,091	5,091	9,548	0	0	52	14,691
Burnt Canyon	0	4,931	4,931	0	0	0	782	5,713
Cedar Point	969	200	200	969	0	0	105	1,274
Eight Mile Canyon	1,354	0	0	1,354	0	0	330	1,684
Kyle Canyon	0	550	550	0	0	0	161	711
Sawmill	807	4,559	4,559	807	0	0	473	5,839
Summit	0	3,055	3,005	0	0	0	161	3,216
Sub Totals	12,678	18,386	18,336	12,678	0	0	2,064	33,128
Total	164,396	211,673	211,673	163,559	0	837	22,174	398,243

Note: Present trend estimates are based on a one time collection of apparent trend data. Trend total includes seeded areas (apparent trend is done on seedings, condition ratings are not done on seedings). No trend data is taken on Douglas Fir or rock outcrops.

TABLE 3-7

PRESENT AND FUTURE (AFTER 15 YEARS) VEGETATIVE BIOMASS AND TOTAL FORAGE PRODUCTION

Allotment	TOTAL BIOMASS Pounds Present	Pounds Future	Pounds Difference	TOTAL FORAGE Pounds Present	AUMs Present	Pounds Future	AUMs* Future	Pounds Difference
Bear Canyon	1,189,600	1,041,450	-148,150	332,000	415	436,800	546	+ 104,800
Bell Mountain	2,344,000	2,172,900	-171,100	640,000	800	847,200	1,059	+ 207,200
Bernice	6,870,398	7,415,150	+544,842	1,096,000	1,370	1,358,400	1,698	+ 262,400
Horse Creek	2,246,084	2,295,700	+49,616	730,400	913	883,200	1,104	+ 152,800
Cedarville	8,678,594	8,778,075	+99,481	3,662,400	4,578	4,204,000	5,255	+ 541,600
Howe Peak	12,645,213	12,617,000	-28,213	2,556,800	3,196	3,725,600	4,657	+1,168,800
Mahogany Butte	16,285,841	18,192,625	+1,906,784	1,830,400	2,288	2,420,000	3,025	+ 589,600
Sinks	8,091,087	7,369,445	-721,642	1,656,800	2,071	1,780,800	2,226	+ 124,000
Wet Creek	1,506,381	1,827,400	+321,019	572,000	715	801,600	1,002	+ 229,600
Wigwam Butte	3,391,079	2,751,650	-639,429	792,000	990	956,800	1,196	+ 164,800
Sub Totals	63,248,187	64,461,395	1,213,208	13,868,800	17,336	17,414,400	21,768	3,545,600
Hawley Mountain	26,488,148	26,820,800	+332,652	6,269,600	7,837	8,529,600	10,662	+2,260,000
Jumpoff	4,654,670	4,866,325	+211,655	941,600	1,177	1,374,400	1,718	+ 432,800
Pass Creek	6,676,738	7,006,650	+329,912	1,380,800	1,726	2,923,200	3,654	+1,542,400
Spring Canyon	11,848,317	12,871,625	+1,023,308	2,342,400	2,928	3,470,400	4,338	+1,128,000
Uncle Ike	9,613,778	9,113,200	-500,578	1,172,000	1,465	1,733,600	2,167	+ 561,600
Warm Springs	3,311,722	3,324,850	+13,128	1,158,400	1,448	1,649,600	2,062	+ 491,200
Williams Creek	1,576,902	1,692,765	+115,863	392,000	490	576,800	721	+ 184,800
Sub Totals	64,170,275	65,696,215	1,525,940	13,656,800	17,071	20,257,600	25,322	6,600,800
Briggs Canyon	4,913,420	5,139,375	+225,955	864,800	1,081	1,352,800	1,691	+ 488,000
Burnt Canyon	1,826,710	1,776,200	-50,510	620,800	776	730,400	913	+ 109,600
Cedar Point	448,893	385,500	-63,393	153,600	192	153,600	192	0
Eight Mile Canyon	478,123	463,400	-14,723	63,200	79	64,800	81	+ 1,600
Kyle Canyon	199,638	201,800	+2,162	34,400	43	49,600	62	+ 15,200
Sawmill	2,135,599	1,870,600	-264,999	565,600	707	781,600	977	+ 216,000
Summit	1,261,649	1,403,500	+141,851	265,600	332	341,600	427	+ 76,000
Sub Totals	11,264,032	11,240,375	-23,657	2,568,000	3,210	3,474,400	4,343	906,400
Totals	138,682,494	141,397,985	+2,715,491	30,093,600	37,617	41,146,600	51,433*	+11,052,800

*Of the additional AUMs - 13,816 (51,433 Future AUMs - 37,617 Present AUMs) 2,866 would come from vegetative manipulation and 10,950 would come from improved management. The AUMs from vegetative manipulation would be allocated to livestock. The AUMs from improved management would be divided between wildlife (3,007 AUMs) and livestock (7,943 AUMs).

TABLE 3-8

PRESENT AND FUTURE (AFTER 15 YEARS) POTENTIAL FORAGE FOR LIVESTOCK AND WILDLIFE

Allotment	LIVESTOCK FORAGE					WILDLIFE FORAGE				
	Pounds Present	AUMs Present	Pounds Future	AUMs Future	Pounds Difference	Pounds Present	AUMs Present	Pounds Future	AUMs Future	Pounds Difference
Bear Canyon	261,600	327	358,400	448	+96,800	70,400	88	78,400	98	+ 8,000
Bell Mountain	388,800	486	559,200	699	+170,400	251,200	314	288,000	360	+ 36,800
Bernice	735,200	919	926,400	1,158	+191,200	360,800	451	432,000	540	+ 71,200
Horse Creek	514,400	643	616,800	771	+102,400	216,000	270	266,400	333	+ 50,400
Cedarville	3,013,600	3,767	3,467,200	4,334	+453,600	648,800	811	736,800	921	+ 88,000
Howe Peak	1,920,000	2,400	2,943,200	3,679	+1,023,200	636,800	796	782,400	978	+ 145,600
Mahogany Butte	1,448,000	1,810	1,951,200	2,439	+503,200	382,400	478	468,800	586	+ 86,400
Sinks	1,147,200	1,434	1,147,200	1,434	0	509,600	637	633,600	792	+ 124,000
Wet Creek	481,600	602	686,400	858	+204,800	90,400	113	115,200	144	+ 24,800
Wigwam Butte	688,800	861	825,600	1,032	+136,800	103,200	129	131,200	164	+ 128,000
Sub Totals	10,599,200	13,249	13,481,600	16,852	+2,882,400	3,269,600	4,087	3,932,800	4,916	+ 663,200
Hawley Mountain	4,489,600	5,612	6,000,800	7,501	+1,511,200	1,780,000	2,225	2,528,800	3,161	+ 748,800
Jumpoff	449,600	562	779,200	974	+329,600	492,000	615	595,200	744	+ 103,200
Pass Creek	844,000	1,055	2,009,600	2,512	+1,165,600	536,800	671	913,600	1,142	+ 376,800
Spring Canyon	1,672,000	2,090	2,652,800	3,316	+980,800	670,400	838	817,600	1,022	+ 147,200
Uncle Ike	722,400	903	1,185,600	1,482	+463,200	449,600	562	548,000	685	+ 98,400
Warm Springs	1,028,000	1,285	1,457,600	1,822	+429,600	130,400	163	192,000	240	+ 61,600
Williams Creek	136,800	171	288,000	360	+151,200	255,200	319	288,800	361	+ 33,600
Sub Totals	9,342,400	11,678	14,373,600	17,967	+5,031,200	4,314,400	5,393	5,884,000	7,355	+1,569,600
Briggs Canyon	557,600	697	965,600	1,207	+408,000	307,200	384	387,200	484	+ 80,000
Burnt Canyon	404,000	505	464,000	580	+60,000	216,800	271	266,400	333	+ 49,600
Cedar Point	73,600	92	73,600	92	0	80,000	100	80,000	100	0
Eight Mile Canyon	40,800	51	40,800	51	0	22,400	28	24,000	30	+ 1,600
Kyle Canyon	34,400	43	49,600	62	+15,200	0	0	0	0	0
Sawmill	463,200	579	651,200	814	+188,000	102,400	128	130,400	163	+ 28,000
Summit	216,000	270	278,400	348	+62,400	49,600	62	63,200	79	+ 13,600
Sub Totals	1,789,600	2,237	2,523,200	3,154	+733,600	778,400	973	951,200	1,189	+ 172,800
Totals	21,731,200	27,164	30,378,400	37,973	+8,647,200	8,362,400	10,453	10,768,000	13,460	+2,405,600

TABLE 3-9

VEGETATION SUMMARY
(Acres)

CONDITION (AFTER 15 YEARS)

Management System	Proposed Action Excellent	Good	Fair	Poor	Existing Situation Excellent	Good	Fair	Poor
Rest Rotation 7 allotments	43,102	71,731	25,553	11,151	1,626	73,321	55,978	32,612
Deferred 10 allotments	14,911	54,294	44,233	40,331	872	45,852	46,204	65,841
Seasonal 7 allotments	11,293	11,053	6,496	712	268	16,335	10,316	4,135
Totals	69,306	142,078	76,282	52,194	2,766	135,508	112,498	102,588

TREND (AFTER 15 YEARS)

Management System	Proposed Action Up	Static	Down	Existing Situation Up	Static	Down
Rest Rotation 7 allotments	71,152	101,512	0	101,512	71,152	0
Deferred 10 allotments	80,566	91,775	0	91,775	79,729	837
Seasonal 7 allotments	12,678	18,386	0	18,386	12,678	0
Totals	164,396	211,673	0	211,673	163,559	837

SUITABILITY (AFTER 15 YEARS)

Management System	Proposed Action Suitable	Pot. Suitable	Unsuitable	Existing Situation Suitable	Pot. Suitable	Unsuitable
Rest Rotation 7 allotments	159,265	9,134	12,832	120,687	47,713	12,832
Deferred 10 allotments	165,876	0	18,007	56,679	109,197	18,007
Seasonal 7 allotments	30,827	0	2,302	22,785	8,041	2,302
Totals	355,968	9,134	33,141	200,151	164,951	33,141

Currently there is 108,588,894 lbs. or 78% of the total biomass reserved for watershed and soil protection purposes. After 15 years under the proposed action there would be a biomass increase of 2,717,491 lbs. Production increases resulting from vegetation manipulation and changes resulting from vegetation condition improvement (quality and quantity) would provide a greater percentage of forage in the total biomass. If the additional forage produced (10,809 AUMs livestock forage and 3,007 AUMs wildlife forage) were utilized, the total biomass remaining for soil protection purposes would be 100,253,585 lbs. or 71% of the total biomass. The remaining 71% would still be well above the generally accepted guidelines of reserving 50% of the vegetation for watershed. Under the proposed action the watershed would maintain the current stability and low erosion rate.

The construction of the proposed range improvements and the vegetative treatments necessary for implementation of the grazing systems would result in a minor short term soil loss. The activities would disturb the protective small rock desert pavement and reduce the vegetative overstory; opening the soil to water erosion. However, conditions should stabalize within one to two years with only a nominal, unmeasurable, net soil loss.

The greater quantity of soil protecting and soil binding plants resulting from improved vegetation condition after 15 years under the proposed action would ultimately increase surface litter and soil humus, and moderate the soil surface micro-climate. These factors would improve the water soil intake, and slightly increase the available moisture. Though the amount of projected increases in available moisture would be too small to be reliably measured, it could improve vegetative production in this semi-arid climate.

Wind Erosion

Wind erosion impacts would be similar to water erosion impacts except on the 7,000 acres proposed for burning. This area would experience a short term loss of one to two tons/acre the first season for a total soil loss of 10,500 tons. However, the SCS soil survey rated the erosion tolerance for these soils at five tons/acre/year and loss of one or two tons of soil would not materially affect the site productivity. The re-emergence of forbs and grasses the next spring would stabilize the soil by the middle of the first growing season.

Conclusion

Impacts to soils resulting from the proposed action would be beneficial. The increased plant cover would protect the soil from both wind and water erosion. Some short term soil loss would be accelerated from establishment of range improvements and vegetation manipulations but these would last from one to two years. Since the erosion rate is so low from the present situation, prediction of changes resulting from the proposed action would be slight and cannot be reliably measured by the Pacific Southwest Interagency Committee method that was used in establishing the current situation.

TERRESTRIAL WILDLIFE

Wildlife populations fluctuate according to a variety of environmental factors including: quantity and quality of food, water, and cover; climatic conditions; disease; social interactions; predation; and human activities. The total impact to wildlife populations would be a function of the interrelationships of the various environmental factors altered by the proposed action.

Many of the animals in the ES area are seasonal inhabitants thus the proposed action may affect only a portion of their life cycle. Also, many species would be impacted as a group such as ground nesting birds. Therefore, the following discussions relate only to a specific significant species, or group of species.

Adverse impacts to terrestrial wildlife are defined as any change which reduces population size below the existing carrying capacity of the habitat, increases population size above carrying capacity, or reduces existing carrying capacity. Beneficial impacts are defined as changes which restore depleted or oversized populations to carrying capacity or which increase carrying capacity for the species being considered.

Causes of adverse and beneficial impacts are grouped into four main categories: habitat alteration; animal displacement; changes in birth and death rates; and stress to animals.

General Impacts

1. Forage Allocation - The proposed forage allocation presented in Table 1-7 shows 10,453 AUMs allotted to wildlife. Sufficient forage has been allocated to support present numbers of antelope and elk and increased mule deer numbers projected over 5 years. The AUM distribution is based on the estimated number of antelope and elk and projected increases in mule deer within the allotments, however the distribution of the animals varies annually depending on climatic conditions and other factors.

The allocation of forage would benefit most terrestrial species by adjusting grazing use to carrying capacity throughout the ES area. The proposed livestock reductions (2,700 AUMs) should provide additional forage for wildlife in those allotments receiving the reductions. The additional forage should result in decreased stress for all species dependent upon terrestrial vegetation for food and cover. Mortality and displacement should be less and carrying capacity should be higher because fewer livestock would reduce competition for forage and cover.

Proposed vegetation manipulations should restore livestock use to current levels on Jumpoff Allotment and reductions are proposed to be partially restored on Warm Springs, Williams Creek, Spring Canyon, and Pass Creek allotments. (Allotments with proposed rest-rotation grazing systems).

2. Grazing Systems - Grazing systems would have both beneficial and adverse impacts on wildlife and will be discussed by allotments and species or groups of species.

Under rest rotation grazing systems, allotments will be stocked according to the carrying capacity of the entire allotment. Thus, grazed pastures would receive greater than 50 percent livestock forage utilization to compensate for rested pastures. Therefore, wildlife in the grazed pastures would experience increased competition for food, water, cover and space from livestock but there would be no livestock competition in rested pastures.

Proposed rest rotation and deferred grazing systems are expected to improve range land condition. (See Table 3-5). Long term increases in grass and forb production and reductions in shrub production are expected under these systems. Wildlife species composition and use associated with vegetation changes (See vegetation section) could be altered according to changes in vegetation compositions. The degree of impact would depend on: stress tolerance of the species; degree of vegetation change; and the availability of adjacent habitats to absorb displaced species. No measureable changes are anticipated in total species diversity or biomass throughout the ES area as a result of the proposed action. However, wildlife species composition and extent of use should change in site specific areas.

The proposed action would provide periodic rest from livestock use of some riparian zones and would eliminate livestock use on Wet Creek, Big Spring Creek, and Squaw Springs. Increased forage and cover would increase long term carrying capacity for riparian associated wildlife.

3. Seasons of Use - Season of use discussions are on a species or group of species basis in ensuing sections.

4. Vegetation Manipulations - Four types of vegetation manipulations are proposed for the ES area: interseeding (5,500 acres); partial brush control followed by reseeding (8,000 acres); brush control on crested wheatgrass seedings (2,500 acres); and burning (7,000 acres). These are designed to increase grass and forb production on 23,000 acres (See Table 1-8).

Interseeding should increase understory production while retaining sagebrush canopy cover. Partial brush control and reseeding involves a significant kill of shrubs (primarily sagebrush) with a subsequent predicted increase in forb and grass production. Shrub production should increase over a 10-15 year period to re-establish current cover and forage. Diversity of vegetation would be enhanced by using a variety of forbs and grasses in seed mixtures.

Burning should maximize edge effect, improve understory production, and maintain fingers and pockets of sagebrush cover. Areas to be burned would be reoccupied by native vegetation and wildlife species diversity should be enhanced. Some cover would be lost but natural reseeding would allow brush to become re-established.

Brush control in crested wheatgrass seedings could promote crested wheatgrass monocultures. Crested wheatgrass seedings which have been reinvaded by sagebrush have more value to wildlife species diversity than seedings devoid of sagebrush. Leaving 10 percent of the brushy areas within these treatments will reduce the overall wildlife impacts.

5. Water Developments - Water developments would improve habitat where water is lacking. Leaving water systems functioning throughout the dry season would improve wildlife distribution for many species. Creation of seeps and fencing of spring sources would provide excellent habitat and a non-competitive food source for birds and small mammals. The quality and carrying capacity of immediate and adjacent habitat would be increased.

Wildlife habitat in the ES area would be enhanced by promoting a more uniform distribution of grazing on the forage resource. Livestock numbers would be adjusted to carrying capacity and forage would be reserved for big game animals. Grazing systems would be designed to improve rangeland condition and key wildlife use areas would be considered in development of AMP's. Intensive livestock management would improve wildlife habitat over the long term. However, rest rotation grazing systems would increase livestock competition in grazed pastures due to higher stocking levels. Vegetation manipulations would benefit wildlife over the long term with the exception of brush control on crested wheatgrass seedings. The overall impact of the proposed action to wildlife would be beneficial except in the case of some discrete actions to specific species. These cases are discussed in detail where appropriate.

Threatened, Endangered and Sensitive Species

Migratory bald eagles and peregrine falcons (endangered species) should benefit from the proposed action, the degree of which is unmeasureable by providing a more stable prey supply. The estimated increase in herbacous vegetation should benefit rodent and rabbit populations which in turn could be beneficial to bald eagles. The stream condition change on 8.5 miles of riparian habitat from the existing situation should result in increased riparian song bird populations. Song birds are the primary prey species of peregrine falcons.

The majority of the sensitive species in the ES area should benefit (again in unmeasurable quanities) from the proposed action. Canada lynx, bobcats and ferruginous hawks should benefit for the same reasons given for bald eagles. However, early spring grazing (May 1 to June 1 could result in abandonment of some ferruginous hawk nest, the degree of which is also unknown because they have alternative nests during different years.

Analysis of long-billed curlews reveals a beneficial but unmeasurable impact. The proposed increase in herbaceous vegetation, rested pastures, and an overall reduction in shrubs should enhance curlew habitat while early spring grazing (before June 1) could result in some nest trampling and/or nest abandonment.

No impact to burrowing owls is anticipated. Several burrowing owl nests could be destroyed from the proposed interseedings and brush control measures. However, as previously discussed, burrowing owl nesting sites will be inventoried and marked for preservation prior to any vegetative treatments.

Pigeon hawks should benefit from the proposal for the same reasons given for peregrine falcons.

Spotted bats should benefit with the development of additional small reservoirs (water bodies) over which spotted bats could feed.

Threatened, endangered, and sensitive wildlife species should benefit from the proposed action by indirect means. Improved rangeland condition resulting from grazing systems and vegetation manipulation should provide a more stable prey base for carnivorous species. Cyclic rest should improve cover for ground nesting species, however, disturbance from early spring grazing treatments could result in some nest abandonment for curlews and ferruginous hawks.

Antelope

1. Forage Allocation - Antelope in the ES area should benefit from the forage allocation. Improved livestock distribution and reductions of livestock numbers should improve habitat conditions on antelope ranges by reducing competition for forage, cover, and space. Carrying capacities would be increased and stress and displacement reduced.

Forage was allocated for current antelope populations (5,152 to 5,985) which are higher than ever previously recorded. Projected antelope population in 15 years under the proposed action is 7,481. An additional 1,830 AUMs will be required to support this projected increase in antelope. Forage should be available from increased production expected from improved livestock management (refer to the vegetation section).

2. Grazing Systems - All allotments proposed for rest rotation systems contain antelope summer range and fawning areas. In the areas being used by livestock, competition for forage, space, and cover could cause fawns and lactating does to move to unused areas. However, in all of these allotments, livestock numbers are being reduced and the degree of impact to antelope should be considerably less than under present conditions. In central Montana, Pyrah (1973), observed that antelope moved from heavily grazed areas to ungrazed areas. The displaced antelope would experience increased competition for fawn bed sites in the ungrazed areas. Antelope remaining in the grazed areas would experience increased stress from competition with livestock. Fawns would be more vulnerable to predators, and increased fawn mortality could affect population levels. Rest rotation systems are proposed on allotments containing 166,512 acres of antelope habitat and 87,023 acres of fawning habitat, occupied by an estimated 2,760 antelope. Negative impacts are expected on approximately one-third of the 41,000 acres of fawning grounds where livestock would be concentrated prior to June 15. However, on two-thirds of the fawning areas no impacts would occur as livestock would not be present during the fawning periods.

Deferred rotation systems would result in fewer adverse impacts to antelope. Competition for forage, space, and cover would be intense when livestock are present, but after livestock are removed, sufficient forage should remain to support present antelope populations. Interaction with livestock would cause some displacement of fawns and lactating does. The degree of displacement is influenced by the amount and kind of livestock involved. Campbell (1970) found that antelope withdrew from Montana range used by sheep, but shared range with cattle. Deferred systems are proposed on 171,211 acres of antelope habitat, 16,645 acres of crucial fawning habitat occupied by an estimated 2,412 antelope.

3. Seasons of Use - Livestock grazing would adversely impact antelope when grazing seasons begin before June 15th or end after October 1st. Dietary overlap is greatest during spring when livestock utilize forbs (Pronghorn Antelope Workshop 1978). Livestock use before June 15th would result in competition for forage, cover, and space during this critical reproductive period.

Fall - winter grazing seasons would result in competition for browse. Grazing after October 1st would damage varying amounts of antelope winter range depending on kind of livestock use, snowfall, and availability of nutritious grasses (See Table 1-6). Winter antelope diets overlap with sheep more than with cattle, although overlap does occur with both. Presence of livestock on antelope range after October 1st would increase stress and displacement of antelope during migrations and winter when energy reserves are low and pre-natal needs are high.

Table 3-10 was developed by analyzing the proposed livestock grazing class of animal, (cattle, sheep, horses), the season of use and stocking rate for the critical antelope areas, fawning and winter ranges, in the ES area. The number of antelope and the percent of critical habitat were considered in making this analysis to arrive at an assessment of the grazing systems impacts to antelope and antelope critical habitat areas. In predicting impacts, the professional judgement by the wildlife biologists is given. Such factors as displacement to adjacent ranges, condition and use of adjacent ranges, past and present doe-fawn ratios, predator populations, estimated degree of tolerance to livestock by antelope, habitat condition and climatic variables were also considered.

Review of Table 3-10 reveals antelope fawning should remain high in Hawley Mountain, Burnt Canyon, Sawmill and Summit allotments as livestock will not be competing with antelope for food, water, cover, or space in critical fawning areas during the reproductive period.

Competition for grass and forbs and stress to fawning does could become significant in Jumpoff Allotment depending on the design of rest rotation grazing system.

TABLE 3-10

PROPOSED ACTION, ANTELOPE CRUCIAL AREA EVALUATION

Allotment Name	Season of Use	ANTELOPE FAWNING: Percent of Total Habitat	Estimated Number	(1) Population and/or Habitat Impacted	(2) Major Impact Source	ANTELOPE WINTERING: Percent of Total Habitat	Estimated Number	(1) Population and/or Habitat Impacted	(2) Major Impact Source
Deferred									
Bear Canyon	05/16 to 10/15	2	47	0	0	-	0	None	None
Bell Mountain	05/16 to 12/02	5	150	-P	S	4	100	-P	B
Bernice	05/01 to 01/15	Trace	200	0	0	7	400	-P	B
Horse Creek	05/16 to 01/21	2	150	-P	S	2	235	-P	B
Cedarville	05/01 to 02/19	3	300	-P	S	6	500	-B	B
Howe Peak	05/10 to 01/15	-	150	0	0	16	718	-P	B
Mahogany Butte	05/01 to 02/14	-	400	0	0	18	400	-P	B
Sinks	05/01 to 12/05	-	410	0	0	12	622	-P	B
Wet Creek	05/16 to 12/30	2	75	0	0	Trace	100	0	0
Wigwam Butte	05/01 to 01/20	-	100	0	0	4	100	-P	B
Rest Rotation									
Hawley Mountain	05/01 to 01/15	34	850	+B	S	3	520	-P	B
Jumpoff	05/01 to 08/20	8	235	-B	B	7	735	-B	B
Pass Creek	05/16 to 08/30	15	175	-B	B	1	150	+B	B
Spring Canyon	05/16 to 01/22	2	700	-B	B	6	450	-P	B
Uncle Ike	05/01 to 01/30	3	450	0	S	5	350	-P	B
Warm Springs	05/16 to 10/15	6	150	-B	B	None	0	None	None
Williams Creek	05/16 to 06/30	4	200	-B	B	3	100	+B	+B
Seasonal									
Briggs Canyon	05/10 to 09/27	4	200	-P	S	6	400	+B	B
Burnt Canyon	07/16 to 09/30	2	150	+B	B	None	100	+B	+B
Cedar Point	12/22 to 01/22	None	0	None	None	None	0	None	None
Eight Mile Canyon	11/01 to 11/30	None	5	0	0	Trace	5	0	0
Kyle Canyon	06/16 to 09/15	None	0	None	None	None	0	None	None
Sawmill Canyon	07/16 to 08/13	5	200	+B	B	None	0	None	None
Summit	07/01 to 10/29	3	78	+B	B	None	0	None	None

+ = Positive
- = Negative
0 = No Impact

(1) P = Population
H = Habitat
B = Both Population and Habitat

(2) S = Season of Use
N = Livestock Numbers
B = Both (Season of Use and Livestock Numbers)

Under the proposed action an estimated 30 to 40 fawns would not survive each year in the Pass Creek Allotment, 20 - 30 fawns in the Warm Springs Allotment and 40 - 50 fawns in the Williams Creek Allotment. Presently fawn mortality is believed to be considerably higher than the projections given due to the high numbers of livestock on these ranges.

No estimate as to the degree of impact for Spring Canyon can be made at this time as the design of the grazing system has not been determined. Some adverse impact to fawning doe antelope will continue, however, with a livestock reduction of 30 percent the degree of impact should be considerably less than at present.

No impact was shown for fawning antelope in the Uncle Ike Allotment due to the vast size of the allotment and low numbers of livestock.

Some adverse impact to antelope does and fawns will occur in the Bernice, Cedarville and Briggs Canyon Allotments. However, these impacts are of a minor nature and are not considered significant.

No impacts are shown to fawning antelope in the Howe Peak, Mahogany Butte, Sinks and Wigwam Butte as these are primarily migratory antelope and the degree of fawning or impacts are not believed to be significant.

Review of Table 3-10 reveals that antelope will benefit from no competition for food, cover and space on the Pass Creek, Williams Creek, Briggs Canyon and Burnt Canyon allotments during the late fall and winter.

In the allotments shown with adverse population impacts (10), stress to antelope will occur, the degree of which cannot be assessed, but not believed to be significant. In all of these allotments, there will be adequate forage for the winter populations.

4. Vegetation Manipulations - The four types of vegetation manipulation will be discussed separately due to the different impacts associated with each project (Table 3-11).

Proposed interseeding could improve carrying capacity on 5,500 acres of crucial antelope fawning areas in Jumpoff and Briggs Canyon allotments, by providing more grass and forbs. However, the area proposed for interseeding is also crucial antelope winter range, and shrub production is critical to antelope winter survival. Data is insufficient to determine extent of kill on sagebrush by interseeding, but if 25 percent or more sagebrush is lost, significant long term adverse impacts would result due to reduction of winter carrying capacity.

TABLE 3-11

VEGETATION MANIPULATIONS AND CRUCIAL
WILDLIFE HABITAT - ANTELOPE

Allotment	#Acres Crucial Pronghorn Winter Range	#Acres Crucial Pronghorn Fawning Grounds
Interseeding		
Jumpoff	4,000	4,000
Briggs Canyon	1,500	1,500
Rotobeat & Interseed		
Pass Creek	1,000	3,000
Spring Canyon	1,000	-----
Williams Creek	500	500
Burning		
Howe Peak	6,000	-----
Rotobeat Crested Wheatgrass Seedings		
Warm Springs	-----	1,000
Pass Creek	-----	1,500

Areas proposed for partial brush control and reseeding would impact crucial antelope fawning grounds and winter range. In Pass Creek and Williams Creek allotments, 3,500 acres of crucial antelope fawning grounds would be adversely impacted in the short term but beneficially impacted in the long term. In Pass Creek, Williams Creek, and Spring Canyon allotments, 2,500 acres of crucial winter range would be removed in the short term. Regrowth of sagebrush would restore winter range and fawning ground values in 10-15 years. Reductions in carrying capacity and displacement would occur in the short term but eventual re-occupation by native brush species would re-establish cover and winter forage in the long term.

Burning on 6,000 acres of crucial antelope winter range in the Howe Peak allotment would temporarily reduce cover and winter forage, but long term impacts would be beneficial due to increased production of native forbs and grasses for spring-summer forage. Increased edge would be provided and old growth sagebrush would be replaced by more nutritious young plants.

Brush control on crested wheatgrass seedings would adversely impact 2,500 acres of crucial fawning grounds on Warm Springs and Pass Creek allotments. Complete sagebrush control would eliminate cover and some forage. Crested wheatgrass monocultures are of limited value to antelope. Impacts of this action would be reduction of carrying capacity. Antelope presently using these areas would be displaced to adjacent habitat over the long term.

5. Water Development - Water development would enhance spring/summer antelope habitat by allowing increased distribution of antelope in areas where water is presently limited. Short term and long term impacts of water developments would be beneficial due to more equal utilization of the forage resource.

6. Fences - Some mortality could be expected from fences in spite of adherance to BLM specifications for antelope. Let-down fences could result in some mortality if snowstorms occur before the fences are dropped because snow depth could prevent them from passing under the bottom wire.

The overall condition of antelope habitat should improve under the proposed action. Certain discrete actions will adversely impact antelope as explained above. However, the antelope population should increase to the projected levels.

Deer

1. Forage Allocation - Deer in the ES area would benefit from forage allocation. Allocations were made for a 5 percent annual increase for the Little Lost herd and a 2 percent annual increase for the Birch Creek herd to insure adequate forage to support 5 year projected populations (2,250 deer).

2. Grazing Systems - Under rest rotation and deferred systems, increased interaction between deer and livestock in the late fall would result in displacement and stress when grazed areas occur on deer winter range. Competition for forage would also result because livestock use browse species in these late seasons, and deer rely primarily on browse during the critical winter period. Cattle use of shrubs would fluctuate annually depending on snow fall and availability of nutritious grasses.

Rest rotation and deferred rotation systems are proposed for allotments containing 86,393 acres of crucial deer winter range, 15,900 acres of which is on areas which are suitable for livestock grazing.

3. Season of Use - Analysis of the proposed action and deer winter range was undertaken the same as described for antelope. By reviewing Table 3-12 conflicts between winter livestock grazing and deer occur on 4 allotments, Hawley Mountain, Jumpoff, Bell Mountain and Cedarville.

Approximately 10 percent of the critical winter range (2,432 acres of the 26,674 acres) in the Hawley Mountain Allotment could be in conflict. Because of the topography of the country, past livestock use distribution and ample deer winter forage, the degree of impact is not considered severe.

A competition situation could develop in Jumpoff and Cedarville allotments. However, when the grazing systems are developed, there will be an opportunity to design the grazing systems to reduce this competition.

Competition between livestock and the 100 wintering deer on the Bell Mountain Allotment will continue to be significant. Under the proposed action, forage for an additional 75 deer will not be available.

The potential for significant competition between livestock and deer in the Spring Canyon, Burnt Canyon, Howe Peak and Mahogany Butte allotments is also apparent. However, sheep will be herded from these winter ranges as identified in the proposed action.

No competition for winter forage will occur in the Pass Creek, Williams Creek and Briggs Canyon allotments.

4. Water Development - Impacts from water development are related to resultant changes in livestock distribution. In Jumpoff, Williams Creek, Hawley Mountain, Burnt Canyon, Bernice, and Spring Canyon allotments, livestock use could increase on deer winter ranges from water development. This could result in decreased deer carrying capacity of these ranges, depending on the season of livestock use. In Bell Mountain and Uncle Ike allotment, livestock use of deer winter ranges would be reduced from water developments, and deer carrying capacity could increase. In general, the proposed action should maintain mule deer habitat in its present condition.

The opportunity to mitigate late season livestock use and deer winter range exists during the development of AMP's. Mule deer populations should increase to the projected levels under the proposed action.

TABLE 3-12

PROPOSED ACTION, DEER CRUCIAL WINTER RANGE EVALUATION

Allotment Name	Season of Use	Percent of Total Habitat	Estimated Number	(1) Population and/or Habitat Impacted	(2) Major Impact Source
		DEER WINTERING			
Deferred					
Bear Canyon	05/16 to 10/15	2	50	0	0
Bell Mountain	05/16 to 12/02	3	100	-B	B
Bernice	05/01 to 01/15	8	74	0	0
Horse Creek	05/16 to 01/21	1	23	0	0
Cedarville	05/01 to 12/19	10	368	-B	S
Howe Peak	05/10 to 01/15	6	77	0	0
Mahogany Butte	05/01 to 02/14	9	80	0	0
Sinks	05/01 to 12/05	2	25	0	0
Wet Creek	05/16 to 12/30	-	0	None	None
Wigwam Butte	05/01 to 01/20	-	0	None	None
Rest Rotation					
Hawley Mountain	05/01 to 01/15	27	533	-B	B
Jumpoff	05/01 to 08/20	7	97	-B	B
Pass Creek	05/16 to 08/30	1	12	+B	+B
Spring Canyon	05/16 to 01/22	6	120	0	0
Uncle Ike	05/01 to 01/30	6	66	0	0
Warm Springs	05/16 to 10/15	Trace	7	None	None
Williams Creek	05/16 to 06/30	3	100	+B	+B
Seasonal					
Briggs Canyon	05/10 to 09/27	2	14	+B	+B
Burnt Canyon	07/16 to 09/30	4	40	0	0
Cedar Point	12/22 to 01/22	1	40	0	0
Eight Mile Canyon	11/01 to 11/30	2	12	0	0
Kyle Canyon	06/16 to 09/15	-	-	None	None
Sawmill Canyon	07/16 to 08/13	-	0	None	None
Summit	07/01 to 10/29	-	0	None	None

\+ = Positive
\- = Negative
0 = No Impact

(1) P = Population
H = Habitat
B = Both Population and Habitat

(2) S = Season of Use
N = Livestock Numbers
B = Both (Season of Use and Livestock Numbers)

Elk

1. Forage Allocations - Elk would benefit from proposed forage allocations. The proposed reduction of livestock use in Pass Creek allotment would provide increased availability of forage to resident elk.

The vegetation inventory indicated that elk ranges are currently supporting populations near carrying capacity. However, both elk herds are healthy and increasing rapidly (Idaho Fish & Game, 1978). Forage would be allocated to support current populations on these existing ranges. An additional 1,177 AUMs would be required to support projections for future elk populations. Forage would be reserved from future increases in production expected from intensive livestock management to support an additional 250 elk in 15 years. Most of this increase would occur on ranges adjacent to existing elk ranges. It is assumed that elk would expand their range in the future to encompass these areas.

2. Grazing Systems - All elk range occurs on allotments proposed for rest rotation systems, Hawley Mountain, Pass Creek and Warm Springs. Rested areas would provide non-competitive habitat to elk. Several studies have shown elk avoid areas used by livestock (Skovlin, et al., 1968; Knowles, 1975; Komberic, 1976; Mackie, 1970) because of the social intolerance of elk to livestock. Livestock use areas would be avoided by elk, and elk would be displaced to adjacent ranges. As proposed vegetation condition improves from rest rotation systems, carrying capacities should increase and allow for increased population levels in the long term. However, with heavy elk use in rested pastures, this increase could take place over a longer period of time than projected.

The overall impact of the proposed action would be positive for elk. Livestock reductions on Pass Creek allotment and proposed improvements in rangeland condition should allow for future population increases.

Upland Game

The proposed action would benefit Hungarian partridge, chukar partridge, mourning doves, cottontail, and pygmy rabbits from improved livestock management. Improved rangeland condition, periodic rest from grazing, and water development will improve habitat condition for these species.

Sage grouse production is currently high in the ES area. Because sage grouse is believed to be the most significant upland game bird in the ES area, an intensive analysis of impacts to sage grouse follows.

1. Grazing Systems - Rest rotation and deferred rotation grazing systems would concentrate livestock use in sage grouse nesting and brood rearing habitat during the crucial brood rearing period. Increased mortality from stress and nest desertion would occur in the grazed areas, but production could be higher in the rested areas than under the present situation. Studies are lacking to document and quantify the

affects of grazing systems on sage grouse. Allotments proposed for rest rotation systems contain 119,002 acres of crucial sage grouse nesting and brood rearing habitat, 77,000 of which occurs on areas suitable for livestock grazing. Allotments proposed for deferred systems contain 43,003 acres of such crucial habitat.

Riparian areas are highly preferred by sage grouse for brood rearing. Proposed rest rotation and deferred grazing systems would provide periodic rest of the riparian vegetation. Increased forage and cover on these areas would enhance sage grouse habitat during the rest treatment. Production could be high in the short term. Wet Creek and Squaw Springs would provide high quality broodrearing habitat to sage grouse following fencing. Carrying capacity should increase, and populations would respond by increased brood survival.

2. Seasons of Use - Sage grouse nesting occurs from mid-April to early June. Sage grouse hens sometimes abandon their nests during egg laying and incubation if disturbed. Livestock use prior to June 15th could result in disturbance of nesting hens and thus reduce nesting success.

An analysis simular to that described for antelope was undertaken on an allotment basis. Table 3-13 shows the anticipated impacts from the proposed action. High benefits to nesting sage grouse would occur in Hawley Mountain where cattle will be held on a crested wheatgrass seeding until after July 1. No grazing during the sage grouse nesting period is also proposed for Burnt Canyon, Sawmill Canyon and Summit allotments.

Although better than the existing situation, impacts would continue to nesting sage grouse in the allotments selected for rest rotation grazing. Forty-four percent of the critical sage grouse nesting and brood rearing habitat are in these allotments. Therefore, cattle could be concentrated on 11 percent of this critical habitat in any given year.

Should the increased stocking level result in reducing the brood success by one half, the average brood size per hen could become 2.3 compared to the 4.7 of the ES area (IDFG, 1978). With an estimated 1,400 to 1,740 hens nesting within these nesting areas, an estimated 3,500 sage grouse chicks would not be produced each year. However, higher than 4.7 chicks per hen could be produced on the 33 percent of the critical habitat that would be rested during the spring period. Data is not available to determine how much the loss would be offset by improved nesting conditions in the rested pastures.

TABLE 3-13

PROPOSED ACTION, SAGE GROUSE CRUCIAL AREA EVALUATION

Allotment Name	Season of Use	SAGE GROUSE BROOD REARING: Percent of Total Habitat	(1) Population and/or Habitat Impacted	(2) Major Impact Source	SAGE GROUSE WINTERING: Percent of Total Habitat	(1) Population and/or Habitat Impacted	(2) Major Impact Source
Deferred							
Bear Canyon	05/16 to 10/15	1	0	0	1	0	0
Bell Mountain	05/16 to 12/02	4	-P	S	4	0	0
Bernice	05/01 to 01/15	3	-P	S	3	0	0
Horse Creek	05/16 to 01/21	2	-P	S	2	0	0
Cedarville	05/01 to 12/19	Trace	0	0	4	0	0
Howe Peak	05/10 to 01/15	Trace	0	0	11	-B	S
Mahogany Butte	05/01 to 02/14	11	-P	S	16	-B	S
Sinks	05/01 to 12/05	Trace	0	0	12	0	0
Wet Creek	05/16 to 12/30	2	-P	S	2	0	0
Wigwam Butte	05/01 to 01/20	None	None	None	4	0	0
Rest Rotation							
Hawley Mountain	05/01 to 01/15	23	+B	B	3	0	0
Jumpoff	05/01 to 08/20	3	-B	B	7	0	0
Pass Creek	05/16 to 08/30	8	-B	B	None	0	0
Spring Canyon	05/16 to 01/22	13	-B	B	6	-B	S
Uncle Ike	05/01 to 01/30	14	-B	B	16	0	0
Warm Springs	05/16 to 10/15	4	-B	B	None	0	0
Williams Creek	05/16 to 06/30	2	-B	B	3	0	0
Seasonal							
Briggs Canyon	05/10 to 09/27	4	-P	S	6	0	0
Burnt Canyon	07/16 to 09/30	1	+B	S	None	0	0
Cedar Point	12/22 to 01/22	Trace	0	0	Trace	0	0
Eight Mile Canyon	11/01 to 11/30	None	None	None	None	0	0
Kyle Canyon	06/16 to 09/15	None	None	None	None	0	0
Sawmill Canyon	07/16 to 08/13	3	+B	S	None	0	0
Summit	07/01 to 10/29	2	+B	S	None	0	0

+ = Positive
- = Negative
0 = No Impact

(1) P = Population
H = Habitat
B = Both Population and Habitat

(2) S = Season of Use
N = Livestock Numbers
B = Both (Season of Use and Livestock Numbers)

The above discussion is based on estimates made by BLM biologists using available data. The impacts (adverse or beneficial) to sage grouse in relation to rest rotation grazing have not been completely documented, and for this reason the above discussion is based on the professional estimates.

No competition for forage between wintering sage grouse and livestock is anticipated on sage grouse winter ranges except in Spring Canyon, Howe Peak and Mahogany Butte allotments. Sagegrouse diet during the winter will average between 95 percent and 99 percent sagebrush leaves. Sagebrush is the principal sage grouse cover. The allotments mentioned above will be grazed by sheep during the winter. Sagebrush is a major winter forage for sheep. The degree of competition between sage grouse and sheep for sagebrush is unquantifiable at this time, however, 33 percent of the crucial sage grouse winter range is involved in these three allotments.

3. Vegetation Manipulations - Impacts from vegetation manipulation would depend on the percent kill of brush and the location and distribution of undisturbed areas. Carrying capacity, degree of stress, and displacement of grouse are subsequently influenced. Vegetation manipulation could adversely impact up to 8 percent or 14,000 acres of crucial sage grouse nesting and brood rearing habitat and 7 percent or 11,500 acres of crucial sage grouse winter range (refer to Table 3-14).

Interseeding could benefit sage grouse by providing increased forb production and increased vegetative diversity while retaining shrub cover. Burning would increase edge and provide forage with higher nutrient content from regrowth following the fire. Long term habitat quality and carrying capacity would increase on 6,000 acres of crucial nesting and brood rearing habitat through interseeding and burning. Sage grouse winter range values would be reduced initially on 5,000 acres in Howe Peak Allotment due to loss of sagebrush cover from burning. However, long term reoccupation by native vegetative species would restore winter range values.

Partial brush control and interseeding would initially reduce habitat quality on 2,500 acres of winter range and 5,500 acres of crucial brood rearing habitat, but long term impacts would be positive. Brush control would reduce cover and forage over the short term but sage grouse habitat values would be restored in 10-15 years as brush regrowth reoccupies these areas. Long term improvement on 5,500 acres of crucial nesting and brood rearing habitat would result from increased vegetative diversity from reseeding a mixture of forbs and grass.

On Warm Springs and Pass Creek allotments, 2,500 acres of crucial sage grouse nesting and brood rearing habitat could be lost as a result of rotobeating existing seedings. Again, location and distribution of undisturbed areas would greatly influence the degree of impact. This would involve 1.5 percent of the total crucial sage grouse brood rearing habitat. Brood production would be reduced due to the elimination of sage grouse cover for nesting grouse in these areas. Vegetative diversity would be reduced.

TABLE 3-14

VEGETATION MANIPULATIONS AND CRUCIAL
WILDLIFE HABITAT - SAGE GROUSE

Allotment	#Acres Crucial Sage Grouse Nesting & Brood Rearing Habitat	#Acres Crucial Sage Grouse Winter Range
Interseeding		
Jumpoff	4,000	4,000
Briggs Canyon	1,500	-----
Rotobeat & Interseed		
Pass Creek	3,000	-----
Spring Canyon	2,000	2,000
Williams Creek	500	500
Burning		
Howe Peak	500	5,000
Rotobeat Crested Wheatgrass Seedings		
Warm Springs	1,000	-----
Pass Creek	1,500	-----

4. Water Development - Water development would benefit sage grouse in the ES area. The proposed developments would increase the distribution of sage grouse during the summer when water availability is limited. Creation of seeps and fencing of spring sources would provide excellent non-competitive habitat.

Sage grouse production should remain high under the proposed action. However, short term losses in habitat quality from proposed vegetation manipulation and grazing systems could reduce population levels. Long term populations should increase when habitat conditions improve, but concentrated grazing before June 15th could hold populations below carrying capacity.

Waterfowl

The overall improvement of 8.5 miles of riparian habitat and the development of additional ponds will be beneficial to waterfowl, the degree of which has not been determined.

Furbearing Animals

The 8.5 miles of enhanced riparian habitat should result in substantial increases in rodent populations. In turn, upland predators (bobcats, lynx, and coyotes) should benefit. Other associated furbearers may also benefit from the improved habitat.

Impacts to Non-game Species

1. Grazing Systems - Non-game wildlife depend on vegetation for cover, and many species utilize vegetation for forage. Early spring livestock use and concentrated grazing use under rest rotation systems would result in competition for forage and cover between livestock and non-game. Physical disturbance would occur in livestock use areas. Non-game species with small home ranges would be more severely impacted than mobile species. Rested areas would provide non-competitive habitat.

Like the furbearing predatory species previously discussed, the proposed increase in herbacous vegetation should result in increased rodent and rabbit populations, thus birds of prey would benefit.

Riparian areas are highly productive non-game habitat. Fencing of Wet Creek, Big Spring Creek and Squaw Springs would allow these areas to increase in carrying capacity over the long term in both species diversity and populations. Periodic rest of riparian areas in allotments where rest and deferred rotation is proposed may increase carrying capacity during the rest treatment.

2. Vegetation Manipulation - Short term adverse and long term beneficial impacts are generally the same as those identified for sage grouse and in the general impacts section. Vegetation diversity would be reduced and shrub cover significantly reduced on 2,500 acres of non-game habitat where brush control on crested wheatgrass is proposed. This represents 1 percent of the non-game habitat in the ES area.

Reductions in carrying capacity would reduce population and species diversity levels of non-game on these acres. Reynolds (1978) found that crested wheatgrass seedings supported fewer nesting species and fewer individual birds than sagebrush areas. The species diversity of mammals and the relative density of both mammals and reptiles was significantly reduced in areas reseeded with crested wheatgrass.

3. Water Development - Water development would benefit non-game populations by improving the distribution of water dependant species in areas where water was previously limited.

Non-game habitat in the ES area would improve by promoting a more uniform distribution of livestock grazing. Improved rangeland condition, increased species diversity from vegetation manipulation and water development would benefit non-game in the long term. Adverse impacts from concentrated spring livestock use would be accompanied by beneficial impacts from periodic rest treatments. Fencing 8.5 miles of riparian habitat would provide excellent non-game habitat in the long term.

AQUATIC WILDLIFE

The ES area is quite unique because most of the waterways are on Public Land. Proposed grazing systems would maintain the existing situation except for Wet Creek, Squaw Springs, and Big Spring Creek where conditions would improve (Table 3-15). Approximately 52.25 miles of stream will remain in poor to fair condition. Of this total, 10 miles will remain in poor to fair condition primarily resulting from livestock grazing. The remaining 42.25 miles is a result of other primary factors such as icing, dewatering, stream channelization, etc. Table 3-16 shows the streams and miles per allotment where livestock grazing will be a major adverse impact. Five miles of Pass Creek will be further studied as to what factors are causing its poor to fair condition.

Spring Developments

Spring developments are not expected to impact aquatic resources. Two of the three proposed developments do not involve fisheries. The third development, Moffett Springs, would contribute water to a wetland about one acre in size. Provision would be made for overflow to return to the wetland area. Barney Hot Springs is the major contributor to the wetland, and conditions would not be expected to change.

Vegetation Manipulation

Vegetation manipulation is expected to have a very slight impact. Rotobeating or burning of existing vegetation may cause a temporary increase in the sediment load of an adjacent waterway. However, with new vegetation growth, the actual amount of soil entering the waterways should be reduced.

TABLE 3-15

CHANGES IN STREAM CONDITION

Stream	MILES OF STREAMS BY CONDITION CLASS[a] GOOD Proposed Action	GOOD Present	FAIR Proposed Action	FAIR Present	POOR Proposed Action	POOR Present
Sawmill Creek	2.0	2.0	2.0	2.0	4.0	4.0
Warm Creek	0.75	0.75	-	-	0.25	0.25
Williams Creek	-	-	2.0	2.0	1.0	1.0
Horse Creek	1.0	1.0	2.0	2.0	1.0	1.0
Badger Creek	-	-	5.0	5.0	-	-
North Creek	0.25	0.25	-	-	-	-
Warm Spring Creek	-	-	3.0	3.0	-	-
Summit Creek	-	-	0.5	0.5	2.0	2.0
Wet Creek	11.0	6.0	-	2.0	-	3.0
Dry Creek	1.5	1.5	-	-	6.5	6.5
Deer Creek	2.0	2.0	1.5	1.5	-	-
Squaw Creek	1.0	0.5	-	-	-	0.5
Big Spring Creek	3.0	-	2.0	5.0	-	-
Fallert Creek	-	-	-	-	3.0	3.0
Little Lost River	2.0	2.0	4.0	4.0	2.0	2.0
Pass Creek	-	-	1.0	1.0	4.0	4.0
Birch Creek	4.0	4.0	5.0	5.0	0.5	0.5
Total Miles	28.5	20.0	28.0	33.0	24.25	27.75

TABLE 3-16

MILES OF STREAM IN POOR TO FAIR CONDITION WHICH WOULD NOT IMPROVE BECAUSE OF PROPOSED ACTION

Name of Stream	Miles of Stream Having No Change	Allotments
William Creek	2.0 Miles	Williams Creek
Horse Creek	0.5 Mile	Uncle Ike
Badger Creek	0.5 Mile	Uncle Ike
Birch Creek	5.0 Miles	Spring Canyon
Little Lost River	2.0 Miles	Uncle Ike, Cedarville, Briggs Canyon, Bell Mountain
	Total 10.0 Miles	

[a]The proposed action would improve 8.5 miles of streams in relation to stream condition and maintain the existing good condition on 20 miles.

Grazing Systems

Implementation of seasonal or deferred grazing systems would not change existing conditions on the streams involved; Summit Creek, Horse Creek, Badger Creek, Warm Springs Creek, Fallert Creek, Little Lost River, and Pass Creek. Condition ratings would be expected to remain as shown in Table 2-11.

Rest rotation would involve Wet Creek, Dry Creek, Squaw Creek, Williams Creek, Badger Creek, Horse Creek, Big Spring Creek, Sawmill Creek, Summit Creek, Warm Creek, and Birch Creek. The livestock turnout date on Deer Creek would be after September 1st, thus Deer Creek would maintain the present good riparian condition. Big Spring Creek would have restricted grazing which would result in a condition change from fair to good on 3 miles of streams (Table 3-15). During heavy grazing use periods, conditions would be expected to revert to the present situation, however, during rest period, stream bank vegetation would be substantially increased on allotments having rest rotation grazing. The overall impact of rest rotation on these streams is unknown. Miles of stream in fair to poor condition that would not improve as a result of the proposed action are shown in Table 3-15.

Fencing

The water gaps on Big Spring Creek are proposed to be removed and an alternate water supply provided. This would allow revegetation of denuded banks, improved bank stability, reduced sedimentation, and reduced fecal coliform bacteria contamination. With an increase in shaded escape areas and reduced sediment enchancing, spawning areas, the general fish population would increase about ten percent.

Wet Creek and Squaw Springs are proposed to be fenced, removing approximately 11 miles of Wet Creek and 1 mile of Squaw Springs from livestock and recreational vehicle use. Condition class should change from fair to good on 5.5 miles of stream (Table 3-15). Provisions would be made for livestock and vehicle crossings, but the crossings would be constructed in a manner which would not degrade the aquatic resource. Implementation of the fencing program and reduced grazing would allow the riparian vegetation to increase to re-occupy present sagebrush areas. Streambanks would stabilize, thus reducing the sediment load. Spawning areas and pools would improve as a result of decreased sedimentation, and the fish population would increase about 50 percent. The effectiveness of fencing aquatic resources has been documented by Van Velson (1977), Winegar (1977), and Duff (1978). Streams in good condition can be expected to have up to 1,000 trout per mile (see Table 2-10).

Impact on Livestock Grazing

I. Stocking Rate

A. Net Impacts to Existing Livestock Numbers

Existing authorized livestock use is 29,864 AUMs which is 2,700 AUMs in excess of the present livestock forage production. Under the proposed action there would be only 27,164 AUMs of forage available to livestock during the planned seasons of use. Taking into account planned conversions of sheep use to cattle use, there would be a net increase of 431 cattle and a net decrease of 4,407 sheep authorized in the ES area.

Changes between the existing authorized use and use under the proposed action would result in a total reduction of 3,306 AUMs in 13 allotments, four allotments would have total increased use of 606 AUMs and the remaining seven allotments would have no changes in the level of livestock grazing use. This would result in a net reduction of 2,700 AUMs over the total ES area. See Table 3-17 for present and future stocking rates by allotment.

B. Net Impacts to the Length of Grazing Season

Through phenology studies done on the ES area, it has been determined that spring grazing should not start prior to May 1 at lower elevations or prior to May 16 on higher elevation allotments. Therefore, under the proposed action, spring turnout dates would be set back from 10 to 60 days on 17 of the 24 allotments, on the remaining seven allotments spring turnout dates would remain unchanged (see Table 3-1) for changes in spring use dates by allotment.

The later grazing season would require livestock to remain on private land longer in the spring. It is estimated that the later spring turnout dates would result in approximately 2,700 cattle and 4,000 sheep remaining on private land. These animals, if fed hay, would consume an estimated 700 tons of hay during the period they presently are turned out in the spring and the date scheduled under the proposed action.

C. Net Impacts to Livestock

As a result of the proposed action, sheep numbers would decrease and cattle numbers would increase. The overall grazing season would be shortened. This would result in livestock being fed hay on private land for a longer period each year. The proposed action would also result in livestock going on more mature and nutritious feed in the spring when they start grazing Public Lands.

TABLE 3-17
PROPOSED AUMs AVAILABLE TO LIVESTOCK COMPARED TO FUTURE AUMs AVAILABLE TO LIVESTOCK AFTER FIFTEEN YEARS UNDER THE PROPOSED ACTION

Allotment	Proposed Authorized AUMs Available For Livestock	Future Authorized AUMs Available For Livestock*
Deferred		
Bear Canyon	327	448
Bell Mountain	486	699
Bernice	919	1,158
Horse Creek	643	771
Cedarville	3,767	4,334
Howe Peak	2,400	3,679
Mahogany Butte	1,810	2,439
Sinks	1,434	1,434
Wet Creek	602	858
Wigwam Butte	861	1,032
Sub Totals	13,249	16,852
Rest-Rotation		
Hawley Mountain	5,612	7,501
Jumpoff	562	974
Pass Creek	1,055	2,512
Spring Canyon	2,090	3,316
Uncle Ike	903	1,482
Warm Springs	1,285	1,822
Williams Creek	171	360
Sub Totals	11,678	17,967
Seasonal		
Briggs Canyon	697	1,207
Burnt Canyon	505	580
Cedar Point	92	92
Eight Mile Canyon	51	51
Kyle Canyon	43	62
Sawmill	579	814
Summit	270	348
Sub Totals	2,237	3,154
Total	27,164	37,973

*Includes the increase in forage that could be available for livestock. It is assumed that forage increase could be allocated to livestock. The time frame on this is 5 to 15 years.

II. Implementation of Grazing Systems

A. Net Impact to Existing Livestock Numbers

Implementation of the proposed action would cause further reductions in two (Jumpoff and Spring Canyon allotments) of the seven allotments scheduled for rest rotation grazing. The reason is both of these allotments are in primarily fair and poor condition. This would amount to 140 AUMs in the Jumpoff allotment and 522 AUMs in the Spring Canyon. The other allotments scheduled for rest rotation are in primarily good to excellent condition and would be stocked at the level identified in Table 1-6.

B. Net Impacts to Length of Grazing Season

Under the proposed action, grazing seasons are set. Therefore, there would be no further impacts or changes on the length of grazing season.

C. Net Impacts to Livestock Preformance

Grazing systems would possibly concentrate cattle for better breeding success. Cattle could be more readily observed in the smaller pastures of a grazing system. Livestock would be moved to fresh feed periodically throughout the grazing season on rest rotation and deferred allotments. New water developments would require livestock to travel less distance between feed and water.

III. Vegetation Manipulations

A. Net Impacts to Livestock Numbers

When forage in vegetation treatment areas becomes available for livestock use (after 5 years) the additional AUMs would be used to reinstate deductions. Five allotments would receive increases totalling 1,683 AUMs (see Table on page 1-16). These additional AUMs, if used over a 6 month grazing season, would result in a possible net increase of 281 cattle on the allotments that have vegetation treatments.

B. Net Impacts to Length of Grazing Season

The planned vegetative manipulations will not change the grazing season.

C. Net Impacts to Livestock Performance

The planned vegetative manipulations would not affect livestock performance because stocking rates would be set by forage production. Therefore, the forage to livestock ratio would not change so no impacts to livestock performance are expected.

IV. Range Improvements

A. Net Impacts to Livestock

Fencing streams would remove approximately 133 acres of riparian vegetation and approximately twelve miles of open stream from livestock use. However, the riparian forage was not allocated to livestock and water would be provided to livestock at other locations. Therefore, livestock would only be inconvenienced by having to travel slightly further to water.

Allotment and pasture fencing would allow for control of livestock and allow the opportunity for improvement in forage condition and increased forage production which would benefit livestock.

Water developments would expand the area that would be used by livestock on a regular basis. This would allow even distribution of grazing over the grazeable portions of each allotment.

The net impact to livestock as a result of range improvements would be improved range condition, increased grazing area, fewer reductions in the short term and possible increases in the long term.

B. Net Impacts to Length of Grazing Season

None

C. Net Impacts to Livestock Performance

Range improvements would allow for improved grazing and vegetative management. This would result in improved vegetation, condition and increased forage production over the long term. Therefore, if livestock have increased quantities of improved quality forage, the net impact would be improved livestock performance.

Impacts to livestock operations concerning adjustments in AUMs are displayed and discussed in the Socio-Economics sections.

V. Conclusions

The initial effects of the proposed action would be a conversion of sheep use to cattle use (net increase of 431 cattle and net decrease of 4,407 sheep) and a decrease in total livestock use of 2,700 AUMs in the study area. This would either result in livestock operation reducing numbers or purchasing hay to make their operations fit the proposed use on Public Land. It will require a total of 1,100 tons of hay to provide the 2,700 AUMs.

Turnout dates in the spring would be delayed 10-15 days on 17 of 24 allotments. Replacement of feed for this period would amount to 700 tons of hay.

After 5 years, 5 allotments would receive increases totaling 1,683 AUMs of additional forage resulting from vegetation manipulation projects. This would be a net increase of 281 cattle.

At the conclusion of 15 years of the proposed action, there would be 37,973 AUMs available that could be allocated to livestock.

27,164 AUMs Initial Stocking Rate
28,847 AUMs After 5 Years
37,973 AUMs After 15 Years

This would raise the level of grazing on 19 allotments to their present qualified use or greater and on 5 allotments less than their present qualified use by a total of 508 AUMs.

IMPACT ON WATER RESOURCES

The water resources of the planning unit are not expected to be affected by the proposed action. The proposed reduction of livestock numbers would not measurably increase the flow of any stream or alter the quantity of ground water. Fecal coliform bacteria contamination and sedimentation rates are expected to decrease by an unknown amount. About 11 miles of Wet Creek and 1 mile of Squaw Creek would be fenced from livestock and recreational vehicles. The livestock water gaps would be removed on Big Spring Creek. Upon completion of the fencing projects, vegetation litter would increase, stream banks would stabilize and water temperature would decrease.

Water quality over the entire area would improve slightly as a result of the beneficial impacts to vegetation cover and soil stabilization, but the magnitude cannot be measured. Most improvement would be along streams that would be fenced from livestock grazing (Wet Creek, Squaw Creek and Big Spring Creek).

IMPACT ON RECREATION

Range improvements are the only component of the proposed action expected to impact recreation except for wildlife increases. As a result of increases in antelope and deer there would be an additional 223 big game hunting days or about a 12 percent increase.

Fences

The proposed action calls for the construction of 93.3 miles of new fence. Many of these fences would create a visual intrusion on the landscape and decrease scenic values (Chapter 3, Visual Resources).

Fences would be barriers to cross-country off-road vehicles and, when nearly buried by snow, would be hazards to snowmobilers. Fences, especially those along streams, would restrict movement for hunters, fishermen and campers.

Fences along Wet Creek, Little Lost River and Birch Creek would exclude cattle from campsites and would eliminate the problems associated with livestock waste and nuisance to recreationists. These fences along with fences along Squaw Creek and Big Spring would ultimately improve water quality and fishing success.

Proposed fencing along Wet Creek would probably increase the stream's game fish population by 50 percent. In turn, fishing activity in the Little Lost drainage could increase by as much as 25 percent or up to about 5,000 visitor days per year. Fences would also benefit wildlife. Rested areas could serve as critical wildlife habitat which could lead to increased wildlife populations within the ES area. Increased hunting activity and increased hunter success could result.

Water Developments

The proposed action calls for the construction of 72.5 miles of pipelines, 45 water troughs and 6 reservoirs. These projects would create a visual intrusion on the landscape and decrease scenic values.

With the development of the proposed water troughs and reservoirs, pronghorn and sage grouse populations could become more widely dispersed. During the mid and late summer months, their populations could increase. Hunting within the ES area could also increase, but hunting success would probably remain unchanged.

Vegetation Manipulation

The vegetation manipulation proposals would create a short term visual intrusion on the landscape and decrease scenic values. Other than the visual impact, they would have no impact on recreation.

Conclusion

Overall impacts to recreation would be slight. Visual intrusions would result from range improvement projects (fences and water developments) and vegetation manipulation projects. They would be more noticeable in the short term and decrease in intensity over the 15 years.

As a result of larger big game populations, there would be an increase of 223 big game hunting days.

IMPACTS TO CULTURAL RESOURCES

Livestock grazing and related activities have been disturbing cultural resource sites in the ES area for over one hundred years by trampling and constructing water developments. The proposed action will produce few new impacts. All affected sites are presently, potentially eligible for nomination to the National Register of Historic Places, either on an individual or group basis. No sites currently listed on or determined eligible to the National Register will be affected by the proposed action. The fencing of stream banks, springs and recreation sites may, in some cases, reduce the rate of deterioration of cultural resource sites as discussed in Appendix 2-12.

Grazing Systems

Regardless of the grazing system employed in the ES area, livestock grazing could disturb known (151 sites) and unknown cultural resource sites. The major site-type affected would be the surface lithic scatter (150 sites) although one case of cattle accelerating the natural deterioration of a pictograph has been documented. Damage would occur from livestock congregating on sites covered with rock chips left by Indians from making weapons and tools.

Range Improvements

Undiscovered sites could be inadvertantly disturbed or destroyed during construction. In cases where undiscovered sites were disturbed there would be a loss of the site value. Emergency salvage required by unexpected discoveries during project construction would be less effective than planned salvage.

A review of proposed projects indicated that some known cultural resource sites in the Bernice, Mahogany Butte, Uncle Ike, Warm Springs, Hawley Mountain, Pass Creek, and Spring Canyon allotments could possibly be disturbed. However, based on existing data, proposed projects in the Bear Canyon, Bell Mountain, Cedarville, Briggs Canyon, Sawmill Canyon and Summit allotments pose no threat to recorded cultural resource sites. Since no new access roads would be required for the construction of range improvement projects, no new areas would be opened up to relic collectors and vandals.

Land Treatment

Preliminary conflict analysis indicated that proposed brush treatment methods may disturb surface lithic scatters (5 sites) in the Jumpoff Allotment. Vegetation manipulation may also disturb sites in the Pass Creek (18 sites), Spring Canyon (10 sites), and Williams Creek (1 site) Allotments.

Conclusion

The proposed action would produce few new impacts to the cultural resources. Sites would continue to be disturbed from livestock grazing primarily from trampling. Undiscovered sites could be disturbed or destroyed from range improvements and vegetation manipulation projects. Beneficial impacts would occur to any sites that would be fenced from livestock and ORV use along streams and in developing springs.

IMPACTS TO VISUAL RESOURCES

The Visual Resource Management (VRM) classes discussed in Chapter II and in Appendix 2-14 were used to provide a basis for measuring impacts of the proposed action on the visual resources of the ES area.

The proposed range improvement projects would result in some adverse visual impacts. The severity of the impact would be directly related to the VRM class in which the improvement would occur (see Figure 2-10) and the proximity of the viewer to the improvement.

In this discussion, the proposed range improvement projects are evaluated according to their potential adverse impacts on the three major VRM classes in the ES area. These impacts include:

1. Disturbance of ground cover from construction of range improvement projects and vegetation manipulation.
2. Creation of unnatural color contrasts with the surrounding area from above-ground structures and exotic vegetation.
3. Production of unnatural vegetation complexes associated with vegetation manipulation projects.
4. Increases in livestock associated visual impacts from livestock concentrations around water sources and along fences.

Within a VRM class, only those projects with a low visual impact level would meet the visual resource management objectives for that class. No mitigation would be necessary. Projects with a moderate or high impact level would not meet the VRM objectives for that class and would require mitigation to accomplish the objective (Table 3-18).

Class I

This class provides primarily for natural ecological changes only. No Class I areas exist in the ES area.

Class II

Changes in any of the basic elements (form, line, color and texture) caused by the grazing management systems would not be evident in the characteristic landscape of a Class II area. Approximately 30 percent of the ES area has been classified as Class II, primarily the mountainous regions.

With the exception of buried pipelines and cattleguards, all proposed range improvement projects would create high visual impacts.

Class III

In a Class III area, changes in the basic elements caused by a range management activity may be evident in the characteristic landscape but would be subordinate to existing visual quality. About 40 percent of the ES area has been classified as Class III. Most Class III areas occur along the major transportation corridors. Scenic quality in these areas is normally lower than in Class I or II areas and is sensitive to adverse visual impacts. With the exception of pump-type wells and water catchments, the proposed range improvements and vegetation manipulation projects would meet the Class III VRM objectives.

I. Social Values and Attitudes

The projected population growth of the four county study area would not be affected by the proposed action.

Attitudes towards the proposed action varied widely between those ranchers who will experience sizeable reductions and those with none or very small reductions in AUMs.

Ranchers with small reductions feel that "the plans are very good" and that their operations will either be not affected or will be helped by the proposed action. One of these ranchers, when asked if the way of life would be significantly affected by BLM's grazing management plans, said "I don't believe so at this time, if the proposal is accepted in this form. It may be a little shift for some people. But BLM policy changes by the month. The ES is only one phase. I'm concerned with the long run, not just this study. I see more problems ahead. There's a school of thought that cattle are bad for the range and bad for people. If cattle were removed from the range it would change our lifestyle completely. If we lose the range we lose the cattle business. The deeded land and the permits are a unit. If that happened I think most ranchers would sell their base property and move to town." Another of these ranchers thought that in the next 20 years "we have the potential to change for the better, if we go ahead with the BLM programs as they're outlined."

Ranchers with large reductions say they will have to "cut the herd unless I can find other ground to run them on. Ground sells for $1,000 per acre and it doesn't pay to pasture on such expensive ground. Don't think I can reasonably expect to find other grazing land." The same rancher also said that he "was going to bring a boy or two into the business. They're in college now and want to come in. With the cut, I don't know if I can." Another rancher said that he "expects further cuts in 5 to 10 years, and I don't expect the politicians (e.g., Congressmen) to stick up for us because we're a minority group." Another said "its (ranching) a way of life and its been encroached upon. We can't hack it with anymore rules and regulations." Many of these ranchers feel that the area income would be cut and possibly force some businesses in town out of business if the proposed action is implemented. "We're bitter and apprehensive. We'll see what we can do. People wouldn't feel so bad if BLM would commit to giving the permits back after improvements are made, but they wouldn't. If we got a commitment we'd bend over backwards."

Conclusion

The ranchers in the ES area seem to fall into two general groups, those with no (or small) reduction in AUMs and those with large reductions. Those operators in the first group feel the BLM plans are good and would benefit everyone while having little impact on their current lifestyles. The second group feels that another external force has been put on them (in addition to those identified in Chapter 2) in the form of government rules and regulations. They feel that they are being made to carry the burden of an anti-livestock sentiment without any form of identifiable support (or promised reinstatements) from the BLM.

II. Economics

Employment

Two ranch jobs would be lost as a result of total ranch income losses under the proposed action. No other employment losses would be anticipated.

The impacts identified in this section were calculated according to DYRAM, a computer model developed by BLM in 1976. (See Appendix 3-3 for explanation of DYRAM.)

Income

See Ranch Economics.

Wildlife and Recreation Economics

In the long term, increased AUMs available to wildlife along with stream improvements would increase hunting and fishing days in the ES area. An increase of 5,000 fisherman days and 223 big game hunting days would be expected (see Recreation Section). The increase in study area expenditures for recreation is shown in Table 3-19. Since most expenditures associated with fishing and hunting are in the services sector (food, gas, lodging, etc.), the interindustry multiplier for services was used to estimate the total study area increase in expenditures from increased fishing and hunting in the ES area.

TABLE 3-19

LONG TERM INCREASE IN FISHING AND HUNTING EXPENDITURES
(Annually)

	Increased[1] Visitor Days	1977 Dollars Expenditures[2] Per Day	Initial Increase in Expenditures	Inter-industry[3] Multiplier	Total Increase
Fishing	5,000	$32	$160,000	1.336	$213,760
Hunting (Big Game)	223	$54	$ 12,042	1.336	16,088
Total	5,223	---	$172,042	1.336	$229,848

[1]From Recreation Section
[2]Utah Fish and Game - Division of Wildlife Resources
[3]Bureau of Land Management, Idaho State Office, Dynamic Regional Analysis Model, December 1978

Ranch Economics

Present (1977 licensed use) and proposed BLM grazing use by allotment was identified for each permittee in the two size classes (Chapter 2). Impacts were determined using the "Net Ranch Cash Income" from the typical ranchers (see Chapter 2). A linear programming model measured the impacts of additional operating costs and/or income loss for two management alternatives: additional purchase of hay in order to maintain present herd size and reduction in size of the brood herd.

1. "Small" Size Class

Eighteen of the BLM permittees in the ES area fall under the "small" size class. Four small operators interviewed (see Chapter 2) had an average of 485 BLM AUMs. Fourteen of the small operators would be reduced from their 1977 licensed use. The average short term reduction for these 14 operators would be 29 percent. The maximum for any one operator would be 46 percent. The affects on ranch income for the small size class follows.

IMPACTS ON RANCH INCOME FOR SMALL RANCH OPERATIONS

Average Reduction of 29% in BLM AUMs

Analysis I Hay Purchase (239 AUs)

Net Ranch Cash Income (From Chapter 2)	$15,287
Net Loss in Income	1,553
Adjusted Net Ranch Cash Income	$13,734

Analysis II Reduction in Herd Size (227 AUs)

Net Ranch Cash Income	$15,287
Net Loss in Income	- 845
Adjusted Net Ranch Cash Income	$14,442

Maximum Reduction of 46% in BLM AUMs

Analysis I Hay Purchase (239 AUs)

Net Ranch Cash Income (From Chapter 2)	$15,287
Net Loss in Income	- 2,457
Adjusted Net Ranch Cash Income	$12,830

Analysis II Reduction in Herd Size (220 AUs)

Net Ranch Cash Income	$15,287
Net Loss in Income	- 1,335
Adjusted Net Ranch Cash Income	$13,952

Assuming those 14 operators selected the "reduction in herd size" alternative the ranch budget interviews indicate that the total annual short term loss of income would then be $11,830 ($845 X 14 = $11,830).

The small operators have a certain amount of flexibility to adjust to reduced stocking levels as a result of a high degree of dependence on outside income (approximately 22 percent of total household income) and due to hay and grain raised on the farm. The majority of this hay is fed to their cattle with the remainder being sold (approximately 6 percent of gross returns).

In the long term (at the end of 15 years), more AUMs could be available for livestock use than are currently licensed. On a case by case basis and as the recource considerations allow, these AUMs would first be used to reinstate the operator's grazing preference. An additional 129 AUMs above the authorized use (on the average) could be available for each small operator. If these additional AUMs were licensed for livestock use, the average BLM AUMs for small operators would be 682. For the purpose of this analysis, the assumption was made that

operators would use these additional AUMs to reduce hay feeding/purchasing requirement, because other restrictions such as base property, labor, etc. would probably preclude increases in herd size. The substitution of less expensive range feed ($1.51/AUM) for the more expensive hay and grain ($12.53/AUM) leads to a gain in income of $11.02 per BLM AUM gained. This long term increase in AUMs is 40 percent above the current licensed use. The average increase in income for the entire size class would be $2,171 per operator, or $39,078 (in 1977 dollars).

2. "Intermediate" Size Class

Twelve of the BLM permittees in the ES area fall under the "intermediate/large" size class. Two of the 12 were not considered in determining the average 1977 licensed BLM AUMs (See rationale in Chapter 2). Average 1977 licensed BLM AUMs for the five operators interviewed (see Chapter 2) was 1,234.

Four of the permittes in the "intermediate/large" size class would receive reductions under the proposed action, so average reductions are based on those four permittees. The average short term reduction would be 26 percent (4 permittees). The maximum reduction would be 49 percent.

IMPACTS ON RANCH INCOME FOR INTERMEDIATE RANCH OPERATIONS

Average Reduction of 26% in BLM AUMs

Analysis I Hay Purchase (364 AUs)

Net Ranch Cash Income (From Chapter 2)	$55,868
Net Loss in Income	-3,537
Adusted Net Ranch Cash Income	$52,331

Analysis II Reduction in Herd Size (337 AUs)

Net Ranch Cash Income	$55,868
Net Loss in Income	-1,954
Adjusted Net Ranch Cash Income	$53,914

Maximum Reduction of 49% in BLM AUMs

Analysis I Hay Purchase (364 AUs)

Net Ranch Cash Income	$55,868
Net Loss in Income	-6,667
Adjusted Net Ranch Cash Income	$49,201

Analysis II Reduction in Herd Size (314 AUs)

Net Ranch Cash Income	$55,868
Net Loss in Income	-3,735
Adjusted Net Ranch Cash Income	$52,133

The total annual short term loss of income for the intermediate operators would be $7,816 using the "reduction in herd size" alternative. ($1954 X 4 = $7,816).

The intermediate sized ranches have considerably more flexibility to adjust to changes in federal range use since other agricultural sales (hay and grain) accounted for more than 17 percent of gross returns. Non-farm income is also higher for intermediate sized ranchers than for small sized ranchers.

After 15 years, an additional 483 AUMs per operator would be available above the current active grazing preference. Assuming these AUMs were licensed for livestock use, the average BLM AUMs for intermediate operators would be 2,198 which is a 78 percent increase over current licensed use. This would lead to an average increase in income of $10,623 per operator or $127,476 (in 1977 dollars) for the entire size class.

The total annual short term (5 years) loss of income for all ranchers in the ES area would be $19,646.

In the DYRAM system, the livestock industry has an interindustry multiplier of 1.352. This means that for every dollar gained/lost in the livestock industry, the study area gains/looses $1.35. The affects of the loss of rancher income on the study area economy are as follows:

Ranch Size	Total Annual Rancher Loss	Multiplier	Total Annual Area Loss
Small	$11,830	1.352	$15,994
Intermediate	7,816	1.352	10,567
Total	$19,646	1.352	$26,561

Other industries which would be impacted are food and kindred products, other manufacturing, transportation and communication, wholesale and retail trade, finance, insurance, and real estate services (Table 3-20).

Over the long term, the total increase in income for all ranchers (small and intermediate) would be approximately $166,554 (assuming 1977 expenses and in 1977 dollars). Therefore, at the end of 15 years, the annual rancher net income would be $166,554 higher than in 1977.

The majority of the intermediate sized ranchers who were interviewed (See Chapter 2, Socio-Economics) are mortgaged through the Federal Land Bank Associations (FLBA) for long term credit. They rely on the Production Credit Associations or commercial banks for recurring short term credit. An example of the process and impact that the proposed action could have on the FLBA/PCA borrower is described as follows:

TABLE 3-20

TOTAL INCOME LOSSES
SHORT-TERM

Industry	Income Losses ($1,000's)
Agriculture	
Livestock (Exc. Dairy-Pltry)	$21.04
Other Agriculture	.61
Mining	
Metal	0
Coal	0
Oil and Gas	0
Other Mining	0
Contract Construction	0
Manufacturing	
Food and Kindred Prod.	1.04
Lumber and Wood Prod.	0
Paper and Allied Prod.	0
Petroleum Refining	0
Primary Metals	0
Other Manufacturing	1.02
Transportation and Communication	1.02
Public Utilities	0
Wholesale and Retail Trade	1.00
Finance, Ins., and Real Estate	.40
Services	.56
Government	
Federal	0
State and Local	0
Total	26.69

Source: Dynamic Regional Analysis Model, Bureau of Land Management, Idaho State Office, Dec. 1978.

Ranchers/farmers obtain loans from the land bank through the Federal Land Bank Association and Production Credit Association. Federal law prohibits the size of real estate loans to 65% of the normal agricultural value as specified in the appraisal report. Ranches are appraised on the number units, or "cows yearlong". Appraisals are based primarily on projected ranch income and closely tied to permitted livestock AUM) use. However, whenever Federal grazing is involved current policies set the maximum loans at 60% of normal agricultural value (60% of agricultural value approximates 40% of market value). The majority of loans within the Spokane District where BLM, or other Federal grazing (e.g., National orest) has been involved have not exceeded 50% of appraised agricultural value, or 30% of market value. Initial reaction of the FLBA and the Intermediate Credit Banks who supervise the Production Credit Associations, to the actions of the Federal Court relative to the detailed environmental statements, and annual renewal policy on grazing licenses is to loan at the rate of 40% of the agricultural value (Farm Credit Association, 1978).

BLM AUMs add value to ranches in the range of $35 - 45 per AUM. All active AUMs are included when determining ranch value. This would be the rancher's actual use plus rancher initiated non-use. It does not include Bureau initiated suspendid non-use.

Thus, reductions in BLM AUMs could have impacts on the rancher's ability to borrow both short and long term capital, which could have more impacts than the original loss of income due to reductions from actual use.

For most operators, the reductions from authorized use would be larger than those from 1977 licensed use. In addition, 24 out of 30 ranchers in the ES area would experience a reduction from their authorized use while only 20 out of 30 would experience losses from their 1977 licensed use. The total loss of AUMs from the active preference for all ranchers would be 2,700.

Conclusion

Short term impacts from the proposed action (adjustments in grazing use) would be a loss of income to ranchers totaling $19,646 and a loss to the area economy of $26,561. This loss would result in two ranch jobs being lost, also, the reduction in BLM AUMs could impact the ranchers ability to borrow capital.

After 15 years, the increase in forage that could be available to livestock would increase net rancher income by $166,554.

Big game and game fish population increases after 15 years would result in 223 more big game hunting days and 5,000 fisherman days which would add income to the area of $229,848.

CHAPTER 4
MITIGATION

CHAPTER 4

All mitigation proposed is described in Chapter 1 as part of the proposed action under Support Requirements, Range Improvements and Standard Operations Procedures.

CHAPTER 5
UNAVOIDABLE ADVERSE IMPACTS

CHAPTER 5

ADVERSE IMPACTS WHICH CANNOT BE AVOIDED

The adverse impacts identified in Chapter 3 are the impacts that would not be mitigated by standard operating procedures as described in Chapter 1. These impacts are the unavoidable adverse impacts identified and summarized in this chapter.

VEGETATION

A short term loss (2-3 years) of vegetation productivity would occur on 280 acres from construction of range improvements. Eight acres would experience a long term vegetation loss as a result of spring developments and reservoir construction.

On the 23,000 acres proposed for vegetation manipulation, a short term loss of productivity would result, but in 2 to 3 years, the productivity would increase by 2,866 AUMs due to the vegetation manipulations.

SOILS

A short term of soil loss of 1.5 tons/acre would result from wind erosion during the first year on the 7,000 acres of controlled burn. The burn area should stabilize by the end of the first growing season following the burn at the current low erosion rate.

WILDLIFE

Rest rotation grazing systems would temporarily increase competition for forage, cover and space on areas grazed by livestock, due to livestock utilization beyond 50 percent of annual forage growth in the grazed treatments. This would occur only on the grazing treatment area. Increased displacement and stress and annual fluctuations in wildlife carrying capacity would occur on approximately one-third of the 41,000 acres of crucial antelope fawning grounds, 77,000 acres of crucial sage grouse brood rearing habitat, and 15,900 acres of crucial mule deer winter range. Competition between fawning antelope and livestock could develop, depending on the design of the grazing system in Jumpoff Allotment. An estimated fawn mortality of 30-40 fawns in Pass Creek Allotment, 20-30 in Warm Springs and 40-50 fawns in Williams Creek can be expected from the proposed stocking level of rest rotation systems.

An impact to wintering deer could develop in Jumpoff and Cedarville Allotments. It will depend on the design of the grazing systems in these allotments as to the degree of impact. Forage for an estimated 75 deer will not be available in the Bell Mountain Allotment.

Seasons of livestock use would be in conflict with wildlife on 18 allotments where seasons begin before June 15th and end after October 1st (refer to Table 1-6). Livestock use prior to June 15th would cause stress and displacement to wildlife during the critical reproductive period. Livestock use after October 1st would result in competition with big game for winter forage and reduction in winter range carrying capacity (refer to table 2-8).

Habitat alteration through vegetation manipulation would impact wildlife species dependant on native shrubs for cover or forage. Partial brush control and reseeding would reduce brush composition on 3,500 (3%) acres of crucial antelope fawning habitat, 2,500 (1%) acres of crucial antelope winter range, 5,500 (3%) acres of crucial sage grouse brood rearing habitat, and 2,500 (2%) acres of crucial sage grouse winter range. Burning would reduce native brush composition on 5,000 (3%) acres of crucial sage grouse winter range and 6,000 (4%) acres of crucial antelope winter range. Brush cover would be reduced on 2,500 (2%) acres of crucial antelope fawning and sage grouse brood rearing habitat from maintenance of existing seedings.

Water developments would increase livestock use on deer winter range on six allotments. Carrying capacity could be reduced on these ranges, depending on design of the grazing systems. However, proper use of these winter ranges by livestock could result in increased deer carrying capacity.

Fences would result in some mortality to big game in spite of adherance to BLM specifications to antelope guidelines.

AQUATIC WILDLIFE

Approximately 10 miles of stream in the area will remain in poor to fair condition resulting primarily from livestock grazing (see Table 3-12 A). The overall affect of rest-rotation grazing on upper portion of Squaw Creek, Sawmill Creek, Summit Creek, Warm Creek and Birch Creek is unknown.

LIVESTOCK

A reduction of 2,700 livestock AUMs would result in 18 operators having to reduce their stocking levels. If hay was used to replace the reduction in AUMs, 1,077 tons would be needed annually. In addition, 17 operators would have a later turnout date. Hay requirements to take care of livestock during this period would be 700 tons.

RECREATION

The 93.3 miles of fencing would restrict cross country recreation movement and would also be a hazard to snowmobilers. The 23 miles of fence along Wet Creek and Squaw Springs would restrict access to these streams.

CULTURAL RESOURCES

Cultural resource sites which are potentially eligible for nomination to the National Register of Historic Places would be subject to trampling by livestock. This impact would be particularly severe at sites associated with water sources. Other potential National Register eligible cultural resource sites could be disturbed during the construction of proposed range improvements as well as the execution of proposed vegetation manipulation schemes. No cultural resource sites, presently listed on the National Register of Historic Places would be affected.

VISUAL RESOURCES

The 93.3 miles of fencing and 23,000 acres of vegetation manipulation would create visual intrusions and detract from the visual experience according to the BLMs resource management class.

SOCIO-ECONOMICS

There would be a $27,000 reduction of net income annually for the area on a short term basis (15 Years). Until forage from vegetative manipulations (5 Years) and from improved management (5-15 Years) could be used.

CHAPTER 6

RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

CHAPTER 6

RELATIONSHIP BETWEEN LOCAL SHORT-TERM USE OF MAN'S ENVIRONMENT AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

For the purpose of this discussion, short term is defined as the time needed to achieve the goals of the proposed action. This should be within 15 years after full implementation of the grazing systems. Long term is that period of time after the 15 years when impacts from the action are still occurring.

The proposed action allocates forage for grazing animals on 398,243 acres of Public Land in the ES area. The following grazing systems would be developed: rest rotation on 7 allotments containing 181,232 acres; deferred rotation grazing for 10 allotments containing 183,883 acres; and seasonal grazing on 7 allotments containing 33,128 acres. Range improvements would involve 237 acres, and vegetation manipulation would occur on 23,000 acres.

Vegetation

1. Short-Term: A reduction of vegetation would occur on the 282 acres involved in range improvement construction and on the 23,000 acres of treatment. The reduction would be on the 5,000 acres proposed for burning and 12,500 acres of rotobeating and 5,500 acres of interseeding and would amount to about 1,000 AUMs.

2. Long-Term: The vegetation on the 282 acres disturbed by range improvements would start recovering the first year after completion of the work except for small areas below the reservoir high water line and areas immediately adjacent to water developments. The vegetation on the 23,000 acres of treatment would increase in density and vigor each year for a period of 5 years and would then become static. The biomass would increase by approximately 2,700,000 pounds and the forage production would increase by 13,816 AUMs. Of the increase in forage, 2,866 would come from vegetative manipulation and 10,950 would come from improved grazing management. Most benefits would come from the rest rotation systems (181,232 acres), then from the deferred rotation systems (183,883), and the least from the seasonal grazing (33,243 acres).

Soils

1. Short-Term: Minor short term soil losses would occur during construction of range improvements. Soils loss after the controlled burn would amount to approximately, 7,500 tons.

2. Long-Term: Revegetation of disturbed areas (282 acres) would create a minor net reduction in soil loss. The projected increase in the vegetation , about 2 million pounds, through the livestock management systems would result in a minor, unmeasureable reduction in annual soil loss.

Terrestrial Wildlife

1. Short-Term: Species diversity and numbers in maintained crested wheat seedings would be below native ranges. Burning would reduce the available forage on antelope and sage grouse winter ranges. Wildlife distribution would improve as a result of water developments. The forage competition between livestock and the 100 deer in the Bell Mountain allotment would continue. Short term fawn mortality would be reduced. Sage grouse chick mortality would increase from the short to the long term, however, significant mortality would continue in allotments proposed with livestock turnout dates prior to June 15 and scheduled for rest rotation grazing. Elk would experience short term forage competition and long term reduced competition with population and range expansion.

The proposed action would provide additional benefits to wildlife such as:

a. Improved habitat (73,100 acres) through improved rangeland condition over the 15 year period.

b. Allocation of forage for present antelope and elk populations and future populations of deer (10,453 AUMs).

c. Allocation of forage for future number of antelope and elk (3,007 AUMs).

d. No spring grazing of livestock on Hawley Mountain Allotment to protect sage grouse brood rearing or antelope fawning areas.

2. Long-Term: The short term benefits and impacts would continue into the long-term for the time the proposed action would be in effect. In addition there would be 3,007 AUMs allocated to provide for future wildlife numbers. The long term wildlife AUMs would be 13,460.

Aquatic Wildlife

1. Short-Term: Aquatic habitat improvement would occur with the fencing of 11 miles of Wet Creek and 1 mile of Squaw Springs, and the restrict grazing on 11 miles. There would be an 8.5 mile increase of good stream condition class and fish populations would increase by 50 percent on Wet Creek and Squaw Springs.

2. Long-Term: The impacts under the short term would continue into the long term, i.e. 10 miles of stream habitat will remain in poor to fair condition as a result of livestock grazing.

Livestock

1. Short-Term: A reduction of livestock grazing would be necessary to meet the carrying capacity of the range.

a. Allotments proposed for rest rotation systems (Jumpoff and Spring Canyon) would have first season reductions sufficient to meet the carrying capacity of the initial treatment areas.

b. A base reduction of 2,700 AUMs would come as either a reduction of livestock numbers or a shortened season of grazing.

c. Of the 30 operators in the ES area 18 would receive reductions. After 5 years 2,866 AUMs would be made available through vegetative manipulation of which 1,683 AUMs would be used to restore active preference. Of the 18 operators, 2 would have their full active preference restored with partial restoration for the remaining 16. An additional 1,183 AUMs could be available to the livestock operators in the allotment that received full preference restoration.

d. After 5 years the improved management would make available an additional 7,943 AUMs, 1,017 of which would be used to restore active preference to the remaining 16 operators. The remaining 6,926 AUMs could be available above active preference in those allotments where the AUMs occur.

2. Long-Term: There would be an additional 8,109 AUMs above the restored active preference which could be made available to livestock in those allotments where the AUMs occur. The long term stocking rate could be 37,973 AUMs.

Water Resources

1. Short-Term: A moderate, positive impact would occur for water quality with minimal impact on water production and consumption.

2. Long-Term: Impact on water production and consumption would be minimal. Water quality would be improved along Wet Creek, Squaw Spring, and Big Spring Creek. Water quality of the remaining waters would be maintained at the current good condition.

Socio-Economic

1. Short-Term: The proposed action would cause an initial decrease in annual income from livestock grazing of about $27,000. Increased forage production anticipated during the first 15 years under the proposed action could help mitigate this loss if the additional forage was allocated to livestock enabling operators to resume stocking levels and feeding practices as in 1977.

2. Long-Term: Over the long term, income from livestock grazing would increase as a result of substituting less expensive range feed for hay and grain as additional AUMs become available.

The flexibility of ranchers in the ES area (primarily as a result of hay and grain production) would enable them to absorb the short term reductions with only minimal impacts.

Summary

In the short term the effect on enhancing the total environment would be: improve 73,100 acres of wildlife habitat; allocate forage for present and future numbers of big game animals; protect crucial antelope fawning and sage grouse brooding areas on the Hawley Mountain allotment; improve 8.5 miles of stream from fair and poor to good; and increase game fish populations by 50 percent. The total environment in the short term would not be enhanced for the following reasons: a loss of vegetation production on 5,000 acres proposed for burning, 12,500 acres for roto-beating, and 5,500 acres of interseeding, which would result in a loss of about 1,000 AUMs; 7,500 tons of soil loss would occur on the 5,000 acres to be burned; wildlife species diversity and numbers in crested wheatgrass seedings would be below native ranges; sage grouse chick mortality would occur in allotments with livestock turnout dates before June 15; a reduction in livestock grazing of 2,700 AUMs would occur; and a $27,000 annual income loss from livestock grazing would occur.

In the long term the effect on enhancing the total environment would be: vegetation biomass would increase by 2,700,000 pounds; forage production would increase by 13,816 AUMs; the short-term benefits for wildlife would continue into the long term; for aquatic wildlife the short-term enhancement would continue into the long term; downward adjustments in livestock AUMs would be restored; there would be an additional 8,109 AUMs available to livestock; income from livestock grazing would increase as a result of substituting less expensive range feed for hay and grain as additional AUMs become available. The total environment in the long term would not be enhanced for the following reasons: the short-term impacts to wildlife would continue into the long term; and 10 miles of stream would continue to be in poor condition because of livestock grazing.

CHAPTER 7
IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

CHAPTER 7

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

This chapter identifies the irreversible and irretrievable commitments of resources resulting from the proposed action. The term irreversible is defined as use that is incapable of being reversed: once something is initiated it would continue. The term irretrievable means irrecoverable: once something is used, it is not replaceable.

VEGETATION

Construction of improvements would remove approximately eight acres from production for the life of the improvements. This is considered to be an irretrievable, but not irreversible commitment.

WILDLIFE

Wildlife and fish populations are considered to be renewable resources and are retrievable, providing that their habitat is not converted to other uses and soil and water resources are preserved.

WATER RESOURCES

Livestock grazing on Public Lands would consume approximately 300 acre feet of water per year at the long term. This would be an irretrievable commitment of resources.

Except as noted above, all other resources involved in this proposal are retrievable and/or reversible. This includes such resources as livestock, wildlife and vegetation.

SOCIO ECONOMIC CONDITIONS

Human resources used in implementing this proposal are considered to be irreversible and irretrievable. Monies, fuel and materials used to develop the proposal are considered to be irretrievable. Once the expenditures are made, those particular funds would not be available for alternative public programs.

CULTURAL RESOURCES

Archaelogical and historical values which may be inadvertantly destroyed as a result of the proposed action are considered to be irretrievable. Proposed livestock grazing and development of facilities could disturb cultural resources (151 sites). Once disturbed, historical and archaeological sites, as well as artifacts, may no longer be available for future study. This may result in a data gap in the history of an area and would be considered an irretrievable commitment.

CHAPTER 8
ALTERNATIVES TO THE PROPOSED ACTION

CHAPTER 8

ALTERNATIVES

The four alternatives to the proposed action are discussed in this chapter in the following order:

1. No action (continuation of present use)
2. No livestock grazing
3. Livestock forage maximization
4. Elimination of spring, late fall and winter grazing

The impacts of each alternative are analyzed for the short term (three to five years after implementation) and the long term (fifteen years and beyond after implementation). The level of authorized livestock use, the number of range improvement projects (fences, water developments), the allocation of forage for wildlife, the conversion from one class of livestock to another and the implementation of grazing systems vary among the alternatives.

Air quality, climate, topography, and minerals will not be discussed because they would not be impacted by any of the alternatives. Also, only those resources that would be impacted by an alternative are discussed under that alternative. The components of each alternative are summarized in Table 8-1. Long term impacts associated with implementation of the proposed action and alternatives are summarized in Table 8-21 at the end of this chapter.

TABLE 8-1

ALTERNATIVES SUMMARY TABLE

COMPONENT - AUM ALLOCATION

Allotment	Allotment Acreage	ALTERNATIVE: Proposed Action		No Action		No Livestock Grazing		Maximize Livestock		Minimize Livestock	
		Livestock	Wildlife	Livestock	Wildlife	Livestock	Wildlife	Livestock	Wildlife	Livestock	Wildlife
Bear Canyon	3,538	327	88	352	75	0	88	327	88	264	88
Bell Mountain	6,633	486	314	544	278	0	314	486	314	155	314
Bernice	22,687	919	451	919	416	0	451	919	451	0	451
Horse Creek	5,559	643	270	643	261	0	270	643	270	167	270
Cedarville	19,655	3,767	811	3,594	710	0	811	3,767	811	723	811
Howe Peak	31,486	2,400	796	2,400	766	0	796	2,400	796	0	796
Mahogany Butte	52,451	1,810	478	1,810	466	0	478	1,810	478	120	478
Sinks	19,781	1,434	637	1,511	574	0	637	1,434	637	923	637
Wet Creek	6,806	602	113	602	166	0	113	602	113	540	113
Wigwam Butte	15,287	861	129	1,236	129	0	129	861	129	0	129
Hawley Mountain	71,655	5,612	2,225	5,589	2,057	0	2,225	5,612	2,225	2,617	2,225
Jumpoff	14,677	562	615	760	581	0	615	562	615	300	615
Pass Creek	17,949	1,055	671	1,955	657	0	671	1,055	671	634	671
Spring Canyon	37,005	2,090	838	2,979	815	0	838	2,090	838	842	838
Uncle Ike	27,872	903	562	903	535	0	562	903	562	229	562
Warm Springs	6,711	1,285	163	1,641	161	0	163	1,285	163	1,028	163
Williams Creek	5,364	171	319	335	278	0	319	171	319	45	319
Briggs Canyon	14,691	697	384	720	380	0	384	697	384	326	384
Burnt Canyon	5,713	505	271	290	265	0	271	505	271	548	271
Cedar Point	1,274	92	100	132	75	0	100	92	100	0	100
Eight Mile Canyon	1,684	51	28	225	25	0	28	51	28	0	28
Kyle Canyon	711	43	0	70	0	0	0	43	0	48	0
Sawmill Canyon	5,839	579	128	384	128	0	128	579	128	560	128
Summit	3,216	270	62	270	62	0	62	270	62	270	62
Totals	398,243	27,164	10,453	29,864	9,860	0	10,453	27,164	10,453	10,339	10,453

TABLE 8-1 (continued)

ALTERNATIVE SUMMARY TABLE

COMPONENT - GRAZING SYSTEMS

Allotment	ALTERNATIVE				
	Proposed Action	No Action	No Livestock Grazing	Maximize Livestock	Minimize Livestock
Bear Canyon	Deferred	Seasonal	None	Deferred	Deferred
Bell Mountain	Deferred	Seasonal	None	Deferred	Deferred
Bernice	Deferred	Seasonal	None	Deferred	Deferred
Horse Creek	Deferred	Seasonal	None	Deferred	Deferred
Cedarville	Deferred	Seasonal	None	Deferred	Deferred
Howe Peak	Deferred	Seasonal	None	Deferred	Deferred
Mahogany Butte	Deferred	Seasonal	None	Deferred	Deferred
Sinks	Deferred	Seasonal	None	Deferred	Deferred
Wet Creek	Deferred	Seasonal	None	Deferred	Deferred
Wigwam Butte	Deferred	Seasonal	None	Deferred	Deferred
Hawley Mountain	Rest Rotation	Seasonal	None	Rest Rotation	Deferred
Jumpoff	Rest Rotation	Seasonal	None	Rest Rotation	Deferred
Pass Creek	Rest Rotation	Seasonal	None	Rest Rotation	Deferred
Spring Canyon	Rest Rotation	Seasonal	None	Rest Rotation	Deferred
Uncle Ike	Rest Rotation	Seasonal	None	Rest Rotation	Deferred
Warm Springs	Rest Rotation	Seasonal	None	Rest Rotation	Deferred
Williams Creek	Rest Rotation	Rest Rotation	None	Rest Rotation	Rest Rotation
Briggs Canyon	Seasonal	Seasonal	None	Seasonal	Seasonal
Burnt Canyon	Seasonal	Seasonal	None	Seasonal	Seasonal
Cedar Point	Seasonal	Seasonal	None	Seasonal	Seasonal
Eight Mile Canyon	Seasonal	Seasonal	None	Seasonal	Seasonal
Kyle Canyon	Seasonal	Seasonal	None	Seasonal	Seasonal
Sawmill Canyon	Seasonal	Seasonal	None	Seasonal	Seasonal
Summit	Seasonal	Seasonal	None	Seasonal	Seasonal

TABLE 8-1 (continued)

ALTERNATIVE SUMMARY TABLE

COMPONENT - SEASON OF USE

Allotment	ALTERNATIVE Proposed Action	No Action	No Livestock Grazing	Maximize Livestock	Minimize Livestock
Bear Canyon	05/16 to 10/15	05/16 to 10/15	No Season of Use	05/16 to 10/15	06/16 to 10/15
Bell Mountain	05/16 to 08/31 11/01 to 12/02	05/01 to 08/31 11/16 to 12/31	No Season of Use	05/16 to 08/31 11/11 to 12/02	06/16 to 08/31
Bernice	05/01 to 06/15 12/16 to 01/15	04/16 to 04/30 05/20 to 05/25 12/01 to 02/15	No Season of Use	05/01 to 06/15 12/16 to 01/15	No Grazing
Horse Creek	05/16 to 07/15 10/16 to 11/21	05/01 to 06/15 10/16 to 11/30	No Season of Use	05/16 to 07/15 10/16 to 11/21	06/16 to 07/15 10/16 to 10/31
Cedarville	05/01 to 07/15 10/01 to 12/19	05/01 to 07/15 09/16 to 09/30 11/01 to 02/15	No Season of Use	05/01 to 07/15 10/01 to 12/19	06/16 to 07/15 10/01 to 12/19
Howe Peak	05/10 to 06/11 11/01 to 01/15	04/16 to 05/31 11/01 to 01/15	No Season of Use	05/01 to 06/11 11/01 to 01/15	No Grazing
Mahogany Butte	05/01 to 06/30 12/11 to 02/14	04/20 to 06/30 12/11 to 02/28	No Season of Use	05/01 to 06/30 12/11 to 02/14	06/16 to 06/30
Sinks	05/01 to 12/05	04/19 to 07/05 10/01 to 12/22	No Season of Use	05/01 to 12/05	06/16 to 10/31
Wet Creek	05/16 to 07/15 10/16 to 12/31	05/01 to 06/30 11/16 to 12/31	No Season of Use	05/16 to 07/15 10/16 to 12/31	06/16 to 07/15 10/16 to 10/31
Wigwam Butte	05/01 to 06/15 11/23 to 01/20	04/25 to 05/06 12/02 to 12/17	No Season of Use	05/01 to 05/16 11/23 to 01/20	No Grazing
Hawley Mountain	05/01 to 12/31 05/01 to 11/30 05/01 to 01/15	05/01 to 12/03	No Season of Use	05/01 to 01/15	06/16 to 10/31
Jumpoff	05/01 to 08/20 12/01 to 01/11	04/20 to 01/24	No Season of Use	05/01 to 08/20 12/01 to 01/11	06/16 to 08/20
Pass Creek	05/16 to 06/30 08/01 to 08/31	05/16 to 06/30 09/01 to 10/31	No Season of Use	05/16 to 06/30 08/01 to 08/31	06/16 to 06/30 08/01 to 08/31
Spring Canyon	05/16 to 12/04 05/16 to 06/30 10/01 to 01/22	05/01 to 10/15 11/16 to 01/31	No Season of Use	05/16 to 01/22	06/16 to 10/31

TABLE 8-1 (continued)

ALTERNATIVES SUMMARY TABLE

COMPONENT - SEASON OF USE (continued)

Allotment	ALTERNATIVE Proposed Action	No Action	No Livestock Grazing	Maximize Livestock	Minimize Livestock
Uncle Ike	05/01 to 06/30 10/01 to 10/23 11/16 to 01/31	05/01 to 06/30 10/01 to 10/23 11/16 to 01/30	No Season of Use	05/01 to 06/30 10/01 to 01/31	06/16 to 10/31
Warm Springs	05/16 to 10/15	05/01 to 09/30	No Season of Use	05/15 to 10/15	06/16 to 10/15
Williams Creek	05/16 to 06/30 11/16 to 12/31	05/01 to 06/30	No Season of Use	05/16 to 06/30	06/16 to 06/30
Briggs Canyon	05/10 to 05/31 09/07 to 09/27	05/01 to 05/10 11/01 to 01/27	No Season of Use	05/10 to 05/31 09/07 to 09/27	09/07 to 09/27
Burnt Canyon	07/16 to 10/31 09/12 to 09/30	07/16 to 10/31	No Season of Use	07/16 to 10/31 09/12 to 09/30	07/16 to 10/31
Cedar Point	12/22 to 01/22	04/19 to 01/22	No Season of Use	12/22 to 01/22	No Grazing
Eight Mile Canyon	11/01 to 11/30	05/01 to 07/15	No Season of Use	11/01 to 11/30	No Grazing
Kyle Canyon	06/16 to 09/15	06/16 to 09/30	No Season of Use	06/16 to 09/15	06/16 to 09/15
Sawmill Canyon	07/16 to 08/13	05/07 to 05/31 09/01 to 12/27	No Season of Use	07/16 to 08/13	07/16 to 08/13
Summit	07/01 to 10/29	07/10 to 10/31	No Season of Use	07/01 to 10/29	07/10 to 10/29

TABLE 8-1 (continued)

ALTERNATIVES SUMMARY TABLE

COMPONENT - CLASS OF LIVESTOCK

Allotment	ALTERNATIVE				
	Proposed Action	No Action	No Livestock Grazing	Maximize Livestock	Minimize Livestock
Bear Canyon	Cattle	Cattle	No Livestock	Cattle	Cattle
Bell Mountain	Cattle	Cattle	No Livestock	Cattle	Cattle
Bernice	Sheep	Sheep	No Livestock	Cattle	Cattle
Horse Creek	Cattle	Cattle	No Livestock	Cattle	Cattle
Cedarville	Cattle	Cattle,Sheep	No Livestock	Cattle	Cattle
Howe Peak	Sheep	Sheep	No Livestock	Sheep	Sheep
Mahogany Butte	Sheep	Sheep	No Livestock	Sheep	Sheep
Sinks	Cattle	Cattle,Sheep	No Livestock	Cattle	Cattle
Wet Creek	Cattle	Cattle	No Livestock	Cattle	Cattle
Wigwam Butte	Cattle	Sheep	No Livestock	Cattle	Cattle
Hawley Mountain	Cattle,Horses	Cattle,Sheep,Horses	No Livestock	Cattle,Horse	Cattle,Horses
Jumpoff	Cattle	Cattle	No Livestock	Cattle	Cattle
Pass Creek	Cattle	Cattle	No Livestock	Cattle	Cattle
Spring Canyon	Cattle,Sheep	Cattle,Sheep	No Livestock	Cattle,Sheep	Cattle,Sheep
Uncle Ike	Cattle	Cattle	No Livestock	Cattle	Cattle
Warm Springs	Cattle	Cattle	No Livestock	Cattle	Cattle
Williams Creek	Cattle	Cattle	No Livestock	Cattle	Cattle
Briggs Canyon	Cattle	Sheep	No Livestock	Cattle	Cattle
Burnt Canyon	Cattle,Sheep	Cattle,Sheep	No Livestock	Cattle,Sheep	Cattle,Sheep
Cedar Point	Cattle	Cattle,Sheep	No Livestock	Cattle	Cattle
Eight Mile Canyon	Cattle	Cattle,Sheep	No Livestock	Cattle	Cattle
Kyle Canyon	Cattle	Cattle	No Livestock	Cattle	Cattle
Sawmill Canyon	Cattle	Cattle,Sheep	No Livestock	Cattle	Cattle
Summit	Cattle	Cattle	No Livestock	Cattle	Cattle

TABLE 8-1 (continued)

ALTERNAIIVES SUMMARY TABLE

COMPONENT - VEGETATIVE MANIPULATION

Allotment	ALTERNATIVE Proposed Action	No Action	No Livestock Grazing	Maximize Livestock	Minimize Livestock
Bear Canyon					
Bell Mountain					
Bernice				Rotobeat & Seed 3,000Acres	
Horse Creek					
Cedarville					
Howe Peak	Control Burn 7,000 Acres			Burn 16,100 Acres	
Mahogany Butte				Rotobeat & Seed 25,000 Acres	
Sinks				Burn 16,100 Acres	
Wet Creek					
Wigwam Butte					
Hawley Mountain					
Jumpoff	Interseed 4,000 Acres			Interseed 8,000 Acres	
Pass Creek	Rotobeat & Seed 4,500 Acres			Rotobeat & Seed 4,700 Acres	
Spring Canyon	Rotobeat & Seed 4,500 Acres			Rotobeat & Seed 11,000 Acres	
Uncle Ike				Rotobeat & Seed 6,500 Acres	
Warm Springs	Rotobeat & Seed 1,000 Acres			Rotobeat & Seed 1,600 Acres	
Williams Creek	Rotobeat & Seed 500 Acres			Rotobeat & Seed 1,000 Acres	
Briggs Canyon	Interseed 1,500 Acres			Interseed 2,500 Acres	
Burnt Canyon					
Cedar Point					
Eight Mile Canyon					
Kyle Canyon					
Sawmill Canyon					
Summit					

TABLE 8-1 (continued)

ALTERNATIVES SUMMARY TABLE

COMPONENT - RANGE IMPROVEMENTS

Allotment	ALTERNATIVE																					
	Proposed Action						No Action						No Livestock Grazing					
	Miles Fence	Miles Pipeline	Water Trough	Spring Develop.	Reservoir	Storage Tanks	Miles Fence	Miles Pipeline	Water Trough	Spring Develop.	Reservoir	Storage Tanks	Miles Fence	Miles Pipeline	Water Trough	Spring Develop.	Reservoir	Storage Tanks
Bear Canyon	0.5	---	---	1.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bell Mountain	---	2.0	2.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bernice	13.0	8.0	3.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Horse Creek	---	1.0	2.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cedarville	3.5	3.5	1.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Howe Peak	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mahogany Butte	---	7.0	3.0	---	4.0	---	---	---	---	---	---	---	---	---	---	---	---	---
Sinks	10.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wet Creek	---	---	2.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Wigwam Butte	5.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hawley Mountain	33.5	8.0	7.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Jumpoff	---	1.5	1.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pass Creek	1.0	2.5	2.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Spring Canyon	6.0	15.0	6.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Uncle Ike	10.8	10.0	6.0	1.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Warm Springs	---	1.5	1.0	1.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Williams Creek	3.0	2.5	3.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Briggs Canyon	4.5	6.0	2.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Burnt Canyon	---	---	---	---	1.0	1.0	---	---	---	---	---	---	---	---	---	---	---	---
Cedar Point	1.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Eight Mile Cyn	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kyle Canyon	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Sawmill Canyon	---	2.5	4.0	---	1.0	---	---	---	---	---	---	---	---	---	---	---	---	---
Summit	---	1.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Totals	93.5	72.5	45.0	3.0	6.0	1.0												

TABLE 8-1 (Concluded)

ALTERNATIVES SUMMARY TABLE

COMPONENT - RANGE IMPROVEMENTS (continued)

Allotment	ALTERNATIVE: Maximize Livestock						Minimize Livestock					
	Miles Fence	Miles Pipeline	Water Trough	Spring Develop.	Reservoir	Storage Tanks	Miles Fence	Miles Pipeline	Water Trough	Spring Develop.	Reservoir	Storage Tanks
Bear Canyon	0.5	---	---	1.0	---	---	0.5	---	---	1.0	---	---
Bell Mountain	---	2.0	2.0	---	---	---	---	2.0	2.0	---	---	---
Bernice	13.0	8.0	8.0	3.0	---	---	13.0	8.0	3.0	---	---	---
Horse Creek	---	1.0	2.0	---	---	---	---	1.0	2.0	---	---	---
Cedarville	3.5	3.5	1.0	---	---	---	3.5	3.5	1.0	---	---	---
Howe Peak	---	---	---	---	---	---	---	---	---	---	---	---
Mahogany Butte	---	7.0	3.0	---	4.0	---	---	7.0	3.0	---	4.0	---
Sinks	10.5	---	---	---	---	---	10.5	---	---	---	---	---
Wet Creek	---	---	2.0	---	---	---	---	---	2.0	---	---	---
Wigwam Butte	5.5	---	---	---	---	---	---	---	---	---	---	---
Hawley Mountain	33.5	8.0	7.0	---	---	---	---	---	---	---	---	---
Jumpoff	---	1.5	1.0	---	---	---	---	1.5	1.0	---	---	---
Pass Creek	1.0	2.5	2.0	---	---	---	1.0	2.5	2.0	---	---	---
Spring Canyon	6.0	15.0	6.0	---	---	---	3.0	15.0	6.0	---	---	---
Uncle Ike	10.8	10.0	6.0	1.0	---	---	6.8	10.0	6.0	1.0	---	---
Warm Springs	---	1.5	1.0	1.0	---	---	---	1.5	1.0	1.0	---	---
Williams Creek	3.0	2.5	3.0	---	---	---	3.0	2.5	3.0	---	---	---
Briggs Canyon	4.5	6.0	2.0	---	---	---	4.5	6.0	2.0	---	---	---
Burnt Canyon	---	---	---	---	1.0	1.0	---	---	---	---	1.0	1.0
Cedar Point	1.5	---	---	---	---	---	1.5	---	---	---	---	---
Eight Mile Cyn	---	---	---	---	---	---	---	---	---	---	---	---
Kyle Canyon	---	---	---	---	---	---	---	---	---	---	---	---
Sawmill Canyon	---	2.5	4.0	---	1.0	---	---	2.5	4.0	---	1.0	---
Summit	---	1.5	---	---	---	---	---	1.5	---	---	---	---
Totals	93.5	72.5	45.0	3.0	6.0	1.0	47.3	64.5	38.0	3.0	6.0	1.0

ALTERNATIVE #1

NO ACTION

Authorized livestock use would continue at the level licensed since adjudication (1956-1962) which is 29,864 AUMs. Forage reserved for wildlife would continue at the present level of 9,860 AUMs.

One allotment, Williams Creek, is presently under a rest rotation grazing system. No new allotment management plans would be developed. Present stocking rates (29,864 AUMs), seasons of use (Chapter 2, Livestock Grazing), etc. would continue. Existing range improvement projects would be maintained. No new water developments or fences would be constructed (see Table 8-1).

IMPACTS ON VEGETATION

Introduction

The primary impacts to vegetation as a result of the no action alternative would be reduced vigor caused by early spring grazing, complete defoliation of vegetation caused by repeated grazing throughout the growing season or by repeated defoliation of plants due to poor livestock distribution.

The following listed components of the no action alternative would result in impacts to vegetation in the ES area:

A. Season of Use - Forage plants depend on adequate carbohydrate reserves to start growth in the spring. When spring growth starts about 50% of the carbohydrate reserves are used in order to produce the first 10% (Cook 1966) of the annual growth. Grazing during the spring when plants are drawing heavily on root storage, can deplete carbohydrate reserves and leave the plant low in vigor. Typical grass species cease to deplete and start to build root reserves at about the four leaf emergence stage (Cook 1966).

In the ES area, phenology studies (USDI, 1977 and 1978) have indicated that on the average year, important forage species have not developed sufficiently (4" to 5" leaf length) to support grazing prior to May 1 in the lower elevations and May 16 in the higher elevations. Under this alternative 17 of the 24 allotments would be grazed in the spring from 10 to 60 days prior to adequate phenological development of major forage species (see Table 3-3 for existing spring turnout dates by allotment). Early spring grazing would cause much of the vegetation in the ES area to remain in a reduced state of vigor and would be a contributing factor to continued forage production below ecological potential.

B. Grazing Systems - Under the no action alternative only one allotment would have a formal grazing system. This allotment is Williams Creek, which would be under a rest rotation grazing system. Impacts to vegetation in Williams Creek allotment would be similar to those listed

under the Impacts of Grazing Systems (rest rotation) in Chapter 3. However, since there would be no reduction in stocking rate under this alternative (the allotment is presently overstocked), negative impacts resulting from early spring turnout before range readiness and overstocking the allotment would cause a reduced state of vigor in forage plants and possibly loss of the better forage plants.

The remainder of the allotments would continue under seasonal grazing and would not be impacted by the no action alternative.

C. Range Improvements - Since no range improvements are planned under the no action alternative there would be a continuation of the existing impacts to vegetation. These impacts would be that livestock would continue to concentrate in desirable areas and stream bottoms. Vegetation in these areas would be over used while vegetation in other parts of the ES area would receive only minimal use. This would result in continued static trend and fair to poor condition on livestock heavy use areas.

This is predicted using the trend data (apparent trend from one year's data) which identifies less than one percent in a declining trend under a stocking rate that has been imposed the last 15 to 20 years.

D. Vegetation Treatments - Since no vegetation treatments are planned under the no action alternative, there would be no impacts to vegetation under this alternative. Poor condition areas with high productive potential would remain in poor condition producing little or no forage.

E. Level of Stocking - Under this alternative there would be no changes in the level of stocking and the present impacts would continue to exist. In allotments that are over stocked (81,705 acres), the above listed impacts could be greater as a result of the stocking rate. In allotments that are not over stocked impacts would remain the same.

Conclusion

Under this alternative, the physiological needs of vegetation would not be met. The impacts of early spring grazing would continue. Livestock would continue to concentrate in desirable areas due to the lack of range improvements. No additional forage would be provided through vegetative treatments and the level of stocking would remain above carrying capacity in 13 allotments. These factors would combine to cause vegetation, that is continually grazed (on suitable range) year after year, to remain in a reduced state of vigor. Based upon existing data (apparent trend) after 15 years would remain the same (upward trend - 211,673 acres, stable trend - 163,559 acres and downward trend - 837 acres). No measurable improvement in condition would be expected (see Table 8-2).

Threatened or Endangered Plants

Impacts to any threatened or endangered plant species in the ES area would be the same as those discussed in Chapter 3.

TABLE 8-2

ALTERNATIVE I - NO ACTION

FUTURE CONDITION, APPARENT TREND SUITABILITY, AND PRODUCTION BY ALLOTMENT

Allotment	CONDITION Excellent	Good	Fair	Poor	TRENO Up	Stable	Down	SUITABILITY Suitable	Potentially	Unsuitable	PRODUCTION AUMs
Bear Canyon	0	1,904	1,361	0	3,265	0	0	3,043	142	353	415
Bell Mountain	0	4,210	1,893	530	6,633	0	0	6,633	0	0	800
Bernice	174	9,234	5,832	5,365	14,367	6,238	0	8,394	10,890	3,403	1,370
Horse Creek	0	818	3,204	380	2,999	2,439	0	3,280	2,168	111	913
Cedarville	0	7,916	638	820	18,147	0	0	6,093	10,614	2,948	4,578
Howe Peak	698	5,931	3,263	15,543	10,366	17,612	0	0	27,708	3,778	3,196
Mahogany Butte	0	8,804	19,139	22,501	16,611	33,833	0	18,882	30,422	3,147	2,288
Sinks	0	2,311	2,620	14,409	6,341	12,899	0	0	17,605	2,176	2,071
Wet Creek	0	-----	3,909	1,188	5,846	471	0	5,921	476	409	715
Wigwam Butte	0	4,724	4,445	5,105	7,200	6,237	837	4,433	9,172	1,682	990
Sub Totals	872	45,852	46,204	65,841	91,775	79,729	837	56,679	109,197	18,007	17,336
Hawley Mountain	644	43,258	16,681	2,353	53,095	14,194	0	53,741	12,898	5,016	7,837
Jumpoff	0	3,665	3,309	5,901	3,157	10,228	0	2,642	10,274	1,761	1,177
Pass Creek	271	7,584	4,537	3,311	5,789	11,605	0	13,282	2,692	1,975	1,726
Spring Canyon	711	12,377	10,564	11,619	24,845	10,426	0	17,763	16,282	2,960	2,928
Uncle Ike	0	3,811	15,517	8,142	10,872	16,598	0	22,298	5,017	557	1,465
Warm Springs	0	2,626	1,510	0	2,231	4,478	0	6,510	67	134	1,448
Williams Creek	0	0	3,860	1,286	1,523	3,623	0	4,451	483	429	490
Sub Totals	1,626	73,321	55,978	32,612	101,512	71,152	0	120,687	47,713	12,832	17,071
Briggs Canyon	0	3,415	8,083	3,131	5,091	9,548	0	10,724	3,820	147	1,081
Burnt Canyon	268	4,123	248	292	4,931	0	0	4,171	1,485	57	776
Cedar Point	0	799	45	325	200	969	0	968	89	217	192
Eight Mile Canyon	0	31	936	387	0	1,354	0	0	960	724	79
Kyle Canyon	0	550	0	0	550	0	0	445	47	219	43
Sawmill	0	5,366	0	0	4,559	807	0	3,679	1,576	584	707
Summit	0	2,051	1,004	0	3,055	0	0	2,798	64	354	332
Sub Totals	268	16,335	10,316	4,135	18,386	12,678	0	22,785	8,041	2,302	3,210
Totals	2,766	135,508	112,498	102,588	211,673	163,559	837	200,151	164,951	33,141	37,617*

*Includes livestock and wildlife AUMs.

IMPACTS ON SOILS

The present low erosion rate of 0.04 acre feet per section per year would continue with no measureable change.

IMPACTS ON TERRESTRIAL WILDLIFE

Present allocation of 29,864 AUMs to livestock would not change nor would livestock distribution. Habitat quality on 12 allotments that are presently over stocked (see Table 1-6) would continue to decline and competition for forage would remain high. Areas near water (Figure 2-9) would receive heavier livestock grazing pressure than areas away from water.

Riparian zones would continue to be over used along Wet Creek (11 miles), 4 miles of Big Spring Creek and 1 mile of Squaw Springs. Wildlife production would remain below potential in riparian zones. Big game, upland game, and non-game species would continue to be displaced from these areas; carrying capacity would remain below potential; and riparian condition would continue to deteriorate.

Competition between livestock and wildlife for forage, cover, and space would remain high in the spring. Present stocking levels in spring are higher than under the proposed action (Table 1-6). Existing turnout dates are prior to range readiness on 17 allotments (Chapter 2, Livestock). Competition for forage prior to range readiness would be intense and physical and social interactions between wildlife and livestock would remain.

Antelope

Livestock would continue to compete with antelope in areas near water. Areas where water is limiting would remain in good condition and provide non-competitive range to antelope.

Population levels would continue to rise (about 600 more animals) under favorable climatic conditions, however, this would be about 830 animals below of Idaho Fish and Game projections. Habitat carrying capacity would be exceeded during years of low forb production or high snowfall, and mortality would occur.

Under this alternative antelope numbers would fall 897 below Idaho Fish and Game populations and an unknown amount of antelope would die during drought and high snowfall years.

Mule Deer

Competition for spring and winter forage would remain at present levels on 22 allotments. Competition would continue year round on specific areas with no periodic rest. Carrying capacity would remain below potential although Idaho Fish and Game projections would be met. Mule deer populations would increase by about 400 animals, but livestock use of deer ranges would reduce available forage and preclude further population increases.

The mule deer range has the potential to support a larger number of deer, but livestock use of deer ranges would reduce available forage and limit deer population increases to just 400.

Elk

Competition for forage would remain at current levels on Pass Creek and Warm Springs allotments. Populations would continue to increase to about 350 elk which is 150 animals less than projections.

Projected increase in elk would be 150 short of that predicted by the Idaho Fish and Game Department for the habitat available to elk. In other words potential elk numbers would not occur because of competition for forage with domestic livestock.

Sage Grouse

Riparian areas would continue to provide sage grouse habitat below potential. Turnout dates before May 1st would displace strutting grouse and disrupt breeding activities on 7 allotments. Population levels would remain below carrying capacity.

Because turnout dates on 32,700 acres of crucial sage grouse brooding areas would be before May 1, sage grouse populations would stay below carrying capacity.

IMPACTS ON AQUATIC WILDLIFE

The no action alternative would have long term adverse impacts on aquatic resources along Wet, Birch, Squaw, and Big Spring Creeks. Vegetation productivity would remain below potential. As mature trees die, no new growth would replace them. Erosion of stream banks would continue, resulting in increased sediment. Pools would decrease in size and number; water temperature would increase; and spawning areas would be reduced. The number of native adult fish will decrease as the survival rate of juveniles decreases. Habitat ratings would be expected to change from fair to poor. Deer Creek would remain in good condition. Those streams in good condition would remain (20 miles), but 33 miles of stream in fair condition would change to poor giving a total of 59.75 miles of stream in poor condition. Of the total of 59.75 miles of stream in poor condtion, 42.75 would be in poor condition as a result of factors other than grazing (Chapter 3).

IMPACTS ON LIVESTOCK GRAZING

Active livestock use would continue at the level licensed since adjudication (1956-1962). Authorized use analyzed under this alternative is 29,864 AUMs. Forage reserved for wildlife would continue at the present level of 9,860 AUMs.

No new allotment management plans would be developed. Present stocking rates, seasons of use, distribution etc. would continue. Existing range improvement projects would be maintained. No new water developments or fences would be constructed (see Table 8-1).

I. Allocation of Forage

Under the no action alternative there would be no changes in forage allocation. Therefore, there would be no impacts to livestock.

II. Implementaiton of Grazing Systems

Under this alternative, no new grazing systems would be implemented. Therefore, there would be no impacts to livestock.

III. Vegetation Manipulations

Under this alternative, no vegetative manipulation projects would be done so there would be no impacts to livestock.

IV. Range Improvements

There would be no new range improvements constructed under this alternative, so there would be no impacts to livestock.

IMPACTS ON WATER RESOURCES

Water quality would remain the same along Wet, Big Spring, Squaw and Birch Creeks. Silt would continue to enter the waterways at the present rate as the stream banks continue to be altered by livestock. Water temperature would increase as riparian vegetation is reduced and water surface area increases.

IMPACTS ON CULTURAL RESOURCES

The impacts presently occurring to cultural resources as described in Appendix 2-12 would continue.

IMPACTS ON RECREATION

Camping, picnicing, hiking, and other recreational activities would suffer minimal adverse impacts, mainly decreased scenic values in stock concentration areas and conflicts with livestock in use areas. With the continued increase in antelope and deer number an estimated additional 116 hunter days would occur.

IMPACTS ON VISUAL RESOURCES

No new adverse visual impacts would result from range improvement projects, but visual quality in areas currently being adversely impacted as described in Chapter 2 would continue.

IMPACTS ON WILDERNESS

Continuation of present management would have little or no affect on areas with wilderness characteristics because no new range improvement projects or vegetative manipulations are planned.

The projected population and employment levels for the four county study area would not be affected by this alternative.

The social value and attitudes currently held by residents of the area would not be affected. This alternative would not cause any changes in the lifestyles of area residents.

Short term hunting and fishing opportunities would not be impacted. In the long term the number of visitor days for big game hunting would increase from 1,915 to 2,031 (see Recreation section). The increased expenditures in the study area as a result of additional hunting in the ES area is shown in Table 8-3. Since most expenditures associated with hunting and fishing are in the services sector (food, gas, lodging, etc.) the interindustry multiplier for services was used to estimate the total study area increase in expenditures.

Under this alternative there would be no short term losses of annual ranch income as authorized grazing use would be 29,864 AUMs and licensed use would continue at 21,885 AUMs. In addition, because no AUMs reductions would occur, agricultural sales would remain the same as described in Table 2-20.

TABLE 8-3

BIG GAME HUNTING AND FISHING EXPENDITURES
ALTERNATIVE 1 (NO ACTION)

Activity	1977 1/ Visitor Days	Expenditures 2/ Per Day	Visitor Days At End Of 15 Years	Change 3/ In Annual Expenditures	Interindustry 4/ Multiplier	Total Change In Expenditures
Big Game Hunting	1,915	$54	2,031	+$6,264	1.336	+$8,368
Fishing	6,900	$32	6,900	0	1.336	0
Totals	8,815	-	9,040	+$6,624	1.336	+$8,368

1/ From Chapter 2, Recreation Section
2/ Utah Fish and Game - Division of Wildlife Resources
3/ In 1977 Dollars
4/ Calculated by the Dynamic Regional Analysis Model (DYRAM), BLM, 1978.

ALTERNATIVE #2

NO LIVESTOCK GRAZING

Under this alternative, all existing grazing privileges and cooperative agreements would be canceled. Livestock operators with investments in cooperative agreements would be entitled to appropriate project salvage rights.

The purpose of this alternative would be to reserve all available forage for resource values other than livestock grazing. All forage would be set aside for wildlife use, and the enhancement of the watershed and visual resources.

No livestock grazing would be allowed on the Public Lands within the ES area. No new range improvements would be constructed. Only those existing improvements which benefit wildlife would be maintained. All forage would be set aside for wildlife and for enhancement of watershed and visual resources. Trailing permits would be issued so livestock could travel across Public Lands to reach National Forest, state and private lands.

IMPACTS TO VEGETATION

Introduction

The primary impacts to vegetation as a result of the no livestock grazing alternative would be improved condition in areas of high production potential (48% of the ES area).

These are the areas with the more productive soils and are in the more favorable precipitation zones. Vegetation on these areas would respond quicker (gain vigor and establish new plants) and improve condition and change the trend from stable to upward.

In southern British Columbia, McLean and Tisdale (1972) indicated after 25 years of protection from livestock, forage yields increased about 100 percent (due to increases of climax perennial grasses).

Improvement in terms of production in the ES area would not be expected to double in 15 years. It is estimated that production would increase about 60 percent over current production in 15 years.

Present and projected trend and condition for this alternative are summarized below: (See Table 8-4):

TABLE 8-4

ALTERNATIVE II - NO LIVESTOCK GRAZING

FUTURE CONDITION AND APPARENT TREND BY ALLOTMENT

Allotment	CONDITION				TREND		
	Excellent	Good	Fair	Poor	Up	Stable	Down
Bear Canyon	952	1,702	611	0	2,313	952	0
Bell Mountain	2,105	1,790	2,676	62	4,528	2,105	0
Bernice	4,791	10,665	3,031	2,118	15,814	4,791	0
Horse Creek	729	3,248	325	100	3,673	729	0
Cedarville	5,558	3,655	157	4	3,816	5,558	0
Howe Peak	3,984	11,582	275	9,594	21,451	3,984	0
Mahogany Butte	4,402	16,134	20,496	9,412	46,042	4,402	0
Sinks	1,155	2,450	2,423	13,212	18,085	1,155	0
Wet Creek	-----	3,379	1,444	274	5,097	0	0
Wigwam Butte	2,362	4,241	5,584	2,087	11,912	2,362	0
Sub Totals	26,038	58,846	37,022	36,863	132,731	26,038	0
Hawley Mt.	22,273	32,889	7,774	0	40,663	22,273	0
Jumpoff	1,833	2,847	6,820	1,375	11,042	1,833	0
Pass Creek	4,063	8,103	3,537	0	11,640	4,063	0
Spring Canyon	6,900	13,120	8,773	6,478	28,371	6,900	0
Uncle Ike	1,905	14,590	8,949	2,026	25,565	1,905	0
Warm Springs	1,393	2,132	611	0	2,743	1,393	0
Williams Creek	0	1,827	3,051	268	5,146	0	0
Sub Totals	38,367	75,508	39,515	10,147	125,170	38,367	0
Briggs Canyon	1,708	5,789	7,132	0	12,921	1,708	0
Burnt Canyon	2,330	2,448	153	0	2,601	2,330	0
Cedar Point	400	447	26	296	769	400	0
Eight Mile Cyn.	15	33	954	352	1,339	15	0
Kyle Canyon	275	275	0	0	275	275	0
Sawmill	2,683	2,683	0	0	2,683	2,683	0
Summit	1,026	1,025	1,004	0	2,029	1,026	0
Sub Totals	8,437	12,700	9,269	648	22,617	8,437	0
Totals	72,842	147,054	85,806	47,658	280,518	72,842	0

	Upward	Stable	Downward
Present acres	211,673	163,559	837
Projected acres	280,518	72,842	0

Veg. Cond.	Present Acres*	Projected Acres*
Excellent	2,766	72,842
Good	135,508	147,054
Fair	112,498	85,806
Poor	102,588	47,658
Total	353,360	353,360

*Total is minus Douglas Fir and rock outcrops and existing seedings.

Threatened and Endangered Plants

As discussed in Chapter 3, no impacts would occur to threatened or endangered plants, the same would be true under this alternative with the removal of domestic livestock. The opportunity to accumulate additional information about the location and phenology of these species would be reduced as there would be no monitoring program for this purpose with the elimination of grazing.

IMPACTS TO SOILS

Implementation of this alternative would have the effect of decreasing sediment yields by less than 0.1 acre foot per square mile per year because of the anticipated increases in vegetation cover. The soils in the ES area would still be in the low erosion condition class.

IMPACTS TO TERRESTRIAL WILDLIFE

More forage, cover, and space would be available to wildlife. Competition between livestock and wildlife would be eliminated. Stress and displacement would be reduced; carrying capacity increased; and population levels increased for most species.

Habitat condition would improve on those areas having high production potential. Riparian areas would provide excellent habitat. Elimination of livestock competition would allow populations to increase as discussed below.

Antelope

Competition with livestock for forage, cover, and space would be eliminated. Carrying capacities would increase and the antelope numbers could increase by about 1,500 animals over present levels.

Mule Deer

Livestock grazing is beneficial to mule deer winter range when selective grazing pressure on grasses during the spring and summer promotes browse growth. Removal of livestock grazing in the fall and winter seasons

would benefit mule deer winter range, however, the overall impact of no livestock grazing could result in a decrease in carrying capacity over the long term. An estimated increase in 300 deer could occur over 15 years, but this would be 100 deer short of management objectives.

Elk

Elk would benefit from no livestock grazing. Space and forage competition would be eliminated. Habitat expansion could occur in the Hawley Mountain and Pass Creek allotment which could allow the population to increase to about 2,000 animals. It is not known if the population could increase to this level, but the habitat and forage would be available.

Sage Grouse

Sage grouse would benefit from no livestock grazing. Riparian areas would provide excellent habitat to sage grouse and production would be high. Succulent forb growth would be more available to grouse for spring-summer forage. Physical disturbance from livestock during sage grouse reproductive cycles on 180,320 acres of crucial brood rearing habitat would be eliminated. Brood rearing success could increase throughout the ES area if other factors (weather, predation, human disturbance) remained constant.

Non-game

Non-game species would benefit from no livestock grazing. Lack of competition with livestock would allow non-game species diversity and population levels to increase. Forage availability would increase. Habitat quality would increase in riparian zones, and non-game production would be high. Physical and social interaction with livestock would be eliminated on 200,155 acres of suitable range.

Sensitive species numbers and distribution with the possible exception of spotted bats could be expected to increase.

Elimination of livestock grazing would provide a consistent forage and cover supply to non-game. The ecosystem would be more stable and non-game populations would not fluctuate as dramatically with annual weather variations and natural cycles.

IMPACTS ON AQUATIC WILDLIFE

The elimination of livestock grazing would have a beneficial impact on the aquatic habitat. Except for Deer Creek, stream condition ratings would improve one class rating (Table 2-10) over the long term.

Increases in riparian vegetation, and overhanging banks, and the decreases of unstable banks would increase spawning and pool areas, improve water quality, and increase trout numbers (Table 8-5). However, water diversions (Chapter 2) would continue to limit productivity, in the lower portions of Birch Creek and Williams Creek.

TABLE 8-5

EXPECTED INCREASE IN TROUT POPULATIONS
UNDER THE NO LIVESTOCK GRAZING ALTERNATIVE

STREAM	NUMBER/MILE NO LIVESTOCK GRAZING	EXISTING SITUATION
Sawmill Creek	110	100
Warm Creek	100	50
Williams Creek	40	25
Horse Creek	150	100
Badger Creek	150	100
Warm Springs Creek	40	25
Summit Creek	1,500	500
Wet Creek	2,250	1,500
Dry Creek	10	10
Squaw Creek	300	200
Big Spring Creek	1,100	1,000
Fallert Creek	60	50
Birch Creek	1,200	800
Little Lost River	375	300

IMPACTS ON LIVESTOCK GRAZING

I. Allocation of Forage

A. Net Impacts to Existing Livestock Numbers

This alternative would result in the removal of all cattle (3,121) and sheep (9,283) from the Public Land. (These animal numbers are based on a six month grazing season which is not the case in all allotments).

B. Net Impacts to Length of Grazing Season

No Livestock grazing would be allowed at anytime of the year.

C. Net Impacts to Livestock Performance

Since livestock, approximately 3,121 cattle and 9,283 sheep would have to be fed from other sources of forage, the total livestock production of the area would be reduced from the present situation of 29,864 AUMs, to zero AUMs on the Public Lands.

II. Implementation of Grazing Systems

No impact to livestock since no grazing systems would be developed.

III. Vegetation Manipulations

No impact to livestock since no vegetative manipulations would be done.

IV. Range Improvements

No impact to livestock since no range improvements would be made.

IMPACTS ON WATER RESOURCES

As riparian vegetation increases, bank erosion would decrease. The results would be improved water quality, reduced siltation, and lower water temperature.

The amount of water available for other purposes would increase about eight million gallons (23 acre-feet). However, this is a negligible portion of the total water yield of the area.

IMPACTS ON CULTURAL RESOURCES

Recreational use could increase (see Recreation), attracting larger numbers of visitors to the ES area. Approximately 2,327 additional visitor days would occur under this alternative. This would increase the pressure upon the 192 cultural sites (see Appendix 2-14 for a discussion of impacts already occurring on these sites).

If cattle are trailed across the Public Lands to reach the National Forest or private lands, impacts on cultural sites (lithic surface scatters - 150 sites) would occur. The specific sites cannot be identified until such stock driveways are mapped out.

IMPACTS TO RECREATION

Overall, this alternative would have beneficial impacts on recreation. Fishing and water quality would improve. Trout populations could increase from 10 to 100 percent in the various streams. With these estimated increases in trout populations, fishing activity could increase up to 25 percent, or 700 visitor days in the Birch Creek drainage and 1,000 in the Little Lost drainage.

Increased game populations resulting from this alternative should increase overall big game hunter days by about 10 percent.

Other beneficial impacts include restoration of the landscape to a more natural state which, in turn, would make sightseeing, picnicing and biking more enjoyable and would eliminate the problems associated with cattle grazing in campsites.

IMPACTS ON VISUAL RESOURCE MANAGEMENT

The beneficial impact from this alternative would be the restoration of the landscape to a more natural state. It would be a long term visual improvement with benefits recognized by aquatics, wildlife, watershed and recreation. The VRM classification would remain unchanged.

IMPACTS ON WILDERNESS

This alternative would have a beneficial impact because with no grazing, no range improvements and no vegetation manipulation, no impacts to potential wilderness areas would occur from these activities.

The projected population growth of the study area would not be effected by this alternative.

This alternative would bring into reality the attitude many ranchers have that additional AUM reduction will occur until there are no cattle on the range. Ranchers feel that if cattle are "removed from the range it will change our lifestyle completely" and if they "lost the range" they "would lose the cattle business." One rancher thought that everybody would sell their base property and move to town. Another rancher thought people would have to "raise stock on their own places and therefore, will have to cut back herd sizes. When we do that it'll shorten the country's meat supply." This alternative would reinforce those attitudes expressed by ranchers relative to continued grazing cuts and lack of support from the general public and politicians. If ranchers were forced into town they would also lose the qualities of ranch living that they so value: a good place to raise children, able to work outdoors, free of supervision, a place for children to have meaningful work and responsibility, and an alternative to city life.

Although overall employment levels would not be impacted by this alternative, employment losses would be important in the livestock industry and those industries which serve it. In the livestock industry approximately 12 ranch jobs would be lost as a result of the loss in total ranch income. This would not have a significant impact to the local economy. Secondary losses (jobs lost in other industries as a result of losses in the livestock industry) would be approximately another 5 jobs. Their impacts have been calculated by DYRAM, a computer model developed by the BLM in 1976 (an explanation of DYRAM may be found in Appendix 3-2), and are displayed in Table 8-6.

This alternative would have no impact on short term hunting and fishing expenditures. In the long term, increased AUMs available to wildlife and stream improvements would increase hunting and fishing days and expenditures (Table 8-7).

Under this alternative all ranchers (small and intermediate) would have their BLM AUMs reduced 100 percent. For the average small rancher this would reduce his net ranch cash income by $5,300 if he purchases hay to replace the cost AUMs. If he reduces his herd to compensate for the lost AUMs, he would lose $2,900 (Table 8-8). Total direct ranch cash income lost for all 18 small operators would be $53,676. In calculating this total, the net loss in income from reducing herd size was used under the assumption that the rancher would pursue that course of action which would minimize his losses.

In the long term (after 15 years) there would be no AUMs available which would be allocated to livestock. If the livestock operators remained in business this would have the same impacts as the short term.

TABLE 8-6

TOTAL EMPLOYMENT LOSSES

INDUSTRY	NUMBER OF JOBS
Agriculture	
Livestock (esc. Dairy-Pltry)	11.57
Other Agriculture	.20
Mining	
Metal	0
Coal	0
Oil and Gas	0
Other Mining	0
Contract Construction	0
Manufacturing	
Food and Kindred Prod.	.87
Lumber and Wood Prod.	0
Paper and Allied Prod.	0
Petroleum Refining	0
Primary Metals	0
Other Manufacturing	.98
Transportation and Communication	.36
Public Utilities	0
Wholesale and Retail Trade	.99
Finance, Ins., and Real Estate	.28
Services	.33
Government	
Federal	0
State and Local	0
Area Summary	15.58

Source: Bureau of Land Management, Idaho State Office, Dynamic Regional Analysis Model (DYRAM), 1978.

TABLE 8-7

BIG GAME HUNTING AND FISHING EXPENDITURES

ALTERNATIVE 2 (NO LIVESTOCK GRAZING)

Activity	1977 1/ Visitor Days	Expenditures 2/ Per Day	Visitor Days At End Of 15 Years	Change 3/ In Annual Expenditures	Interindustry 4/ Multiplier	Total Change In Expenditures
Big Game Hunting	1,915	$54	2,370	+$24,570	1.336	+$32,826
Fishing	6,900	$32	11,900	+$160,000	1.336	+$213,760
Totals	8,815	-	14,270	+$184,570	1.336	+$246,585

1/ From Chapter 2, Recreation Section
2/ Utah Fish and Game - Division of Wildlife Resources
3/ In 1977 Dollars
4/ Calculated by the Dynamic Regional Analysis Model (DYRAM), BLM, 1978.

TABLE 8-8

RANCHER INCOME EFFECTS DUE TO THE
NO LIVESTOCK GRAZING ALTERNATIVE
SMALL RANCHES

Reduction of 100% in BLM AUMs	
Analysis I Hay Purchase (239 Animal Units)	
Net Ranch Cash Income (From Chapter 2)	$15,287
Net Loss in Income	-5,345
Adjusted Net Ranch Cash Income	$ 9,942
Analysis II Reduction in Herd Size (199 AUs)	
Net Ranch Cash Income (From Chapter 2)	$15,287
Net Loss in Income	-2,982
Adjusted Net Ranch Cash Income	$12,305
Total Size Class Loss	
Average Net Loss in Income	$ 2,982
Number of Small Operators	X 18
Total Loss of Income	$53,676

It can be assumed that an economic impact of this magnitude in the long term would put those operators who are marginal economically out of business and greatly alter those operations who are able to remain because of the loss of AUMs from the Public Lands.

For the average intermediate size ranch, this alternative would reduce net cash ranch income by $13,600 if hay is purchased to replace the lost AUMs and $7,600 if the rancher reduces his herd size. For the entire size class (12 operators), this would be a loss of $90,708 in income (Table 8-9).

The long term impact on the intermediate size ranchers would be the same as on the short term for this alternative.

The total short term loss of income for all ranchers in the ES area would be $144,384. Table 8-10 shows the original loss of $144,000 in income from the livestock industry results in a total study area income loss of approximately $192,000.

If all BLM grazing priviledges were suspended, financing (both short and long term) for operationing expenses and capital equipment would be severely impacted. Ranchers would no longer have the value of their BLM AUMs as an asset which would (in many cases) make it very difficult, if not impossible, for the ranchers to obtain necessary capital for production or improvement costs.

Approximately 12 ranch jobs would be lost as a result of the loss in total ranch income; in addition, there would be a secondary loss of another five jobs as a result of losses in the livestock industry. Total direct ranch income loss for all operators would be $144,384. This loss in ranch income from the livestock industry would result in a total study area income loss of approximately $192,000.

TABLE 8-9

RANCHER INCOME EFFECTS DUE TO THE
NO LIVESTOCK GRAZING ALTERNATIVE
INTERMEDIATE RANCHES

Reduction of 100% in BLM AUMs	
Analysis I Hay Purchase (364 Animal Units)	
Net Ranch Cash Income (From Chapter 2)	$55,868
Net Loss in Income	-13,599
Adjusted Net Ranch Cash Income	$42,269
Analysis II Reduction in Herd Size (261 AUs)	
Net Ranch Cash Income (From Chapter 2)	$55,868
Net Loss in Income	- 7,559
Adjusted Net Ranch Cash Income	$48,309
Total Size Class Loss	
Average Net Loss in Income	$ 7,559
Number of Intermediate Operators	X 12
Total Loss of Income	$90,708

TABLE 8-10

TOTAL INCOME LOSSES BY INDUSTRY, BY TIME PERIOD

INDUSTRY	($000's)
Agriculture	
Livestock	$151.51
Other	4.41
Mining	
Metal	0
Coal	0
Oil and Gas	0
Other	0
Contract Construction	0
Manufacturing	
Food and Kindred	7.51
Lumber and Wood	0
Paper and Allied	0
Petroleum	0
Primary Metals	0
Other	7.36
Transportation and Communication	7.36
Public Utilities	0
Wholesale and Retail Trade	7.21
Finance, Ins., Real Estate	2.92
Services	4.04
Government	
Federal	0
State and Local	0
Area Summary	$192.32

Source: Bureau of Land Management, Idaho State Office, Dynamic Regional Analysis Model (DYRAM) January 1978.

ALTERNATIVE #3

LIVESTOCK FORAGE MAXIMIZATION

The purpose of this proposal would be to provide maximum AUMs (46,734) for livestock numbers on the Public Lands after 15 years. The authorized initial livestock use would be the same as the short term proposed action of 27,164 AUMs. However, after 15 years there would be an additional 19,570 AUMs available for livestock use. The grazing seasons and treatments, and class of livestock would remain the same as for the proposed action (see Table 8-1). Criteria for determining the grazing management system would be the same as those in Chapter 1.

To provide the maximum AUMs for livestock approximately 95,500 acres of vegetative manipulation are proposed on Public Lands. (See Table 8-1 for acreage scheduled by allotment). The total acreage of vegetative manipulation would include 32,200 acres of burning, 10,500 acres of interseeding, and 52,800 acres of rotobeating and seeding. As a result of these vegetative manipulations and improved management, there would be an additional 8,620 AUMs which could be made available for livestock use in three to five years. As a result of the improved management (see Chapter 3 - Vegetation) there would be an additional 10,950 AUMs available at the end of 15 years which could be allocated to livestock. At the end of 15 years the increase to livestock could be 19,570 AUMs to total 46,734 AUMs.

Under this alternative allocation to wildlife would be 10,453 AUMs, the same as the proposed action, and would not change (Chapter 1, Table 1-7).

Range improvements under this alternative would consists of 93.5 miles of fence, 72.5 miles of pipeline, 45 water troughs, 3 spring developments, six reservoirs, and one storage tank.

This alternative was developed from the planning system which identified all areas on which vegetative manipulation could occur.

IMPACTS TO VEGETATION

Introduction

The primary impacts to vegetation under this alternative would be the short term disturbance caused to 95,500 acres of vegetative manipulation treatment. All other impacts would remain the same as those listed under the proposed action.

A. Season of Use - The impacts to vegetation due to season of use would be the same as those listed under the proposed action. No grazing would occur prior to proper phenological development of major forage species.

B. Grazing Systems - The impacts to vegetation due to implementation of grazing systems would be the same as those listed under the proposed action. All grazing would take place under grazing systems as planned in the proposed action.

Threatened and Endangered Plants

No impacts to any threatened or endangered plants are anticipated.

IMPACTS TO SOILS

A short term, unmeasurable soil loss would occur on the treated areas for one to two years after treatment as a result of wind and water erosion. Once the seedings were established, the sediment yield would stabilize near the present low average yield rate of 0.04 acre feet per section per year. The Pacific Southwest Interagency Committee method was used to calculate the soil losses.

On the 32,200 acres that would be burned, a short term loss of from one to two tons/acre of soil would be lost the first year. However, the SCS soil survey rated the erosion tolerance for these soils at five tons/acre/year and loss of one or two tons of soil would not materially affect the site productivity.

IMPACTS TO TERRESTRIAL WILDLIFE

Converting native range to crested wheatgrass monocultures would reduce the shrub component. Native grasses and forbs would become very limited due to the competitive advantage of crested wheatgrass. Carrying capacity on 95,500 acres of native range for wildlife would be lowered due to reductions in shrubs and vegetation diversity. Stress and displacement would result in increased mortality and decreased birth rates. Population levels for those species dependent on native vegetation would be reduced on 95,500 acres.

General impacts from grazing systems would be the same as under the proposed action. However, competition for space, forage, and cover would be more intense due to the heavier livestock stocking levels on Wigwam Butte, Sinks, Pass Creek, Williams Creek, Briggs Canyon, Jumpoff, Spring Canyon, Uncle Ike, Mahogany Butte, Howe Peak, Bernice, and Warm Springs allotments. Impacts from water developments and fencing would be the same as those discussed in Chapter 3.

Antelope

Native sagebrush range would be converted to crested wheatgrass on 75,000 acres of crucial antelope winter range or 43 percent of the total. Approximately 2,500 resident antelope which use these areas in the winter would be displaced to adjacent native range. Severe grazing pressure on brush species in adjacent habitat would result in long term damage to brush species.

In addition, approximately 2,500 migratory antelope would be forced to migrate through low quality habitat in Jumpoff, Spring Canyon, Mahogany Butte, and Howe Peak allotments. Displacement and stress would increase mortality. Decreased birth rates would occur due to insufficient winter forage to maintain pregnant does. Carrying capacity of crucial winter ranges would be reduced and population levels would be reduced by 60 to 80 percent.

Cover and forage from brush species would be eliminated on 14,000 acres or 11 percent of the crucial antelope fawning grounds. Carrying capacity and population levels would be decreased over the long term. Populations of antelope would decrease from their present numbers of 5,985 to approximately 1,796, or a decrease of about 70 percent.

Mule Deer

Some crucial mule deer winter range (1,500 acres or 2 percent of the total) would be converted to crested wheatgrass monocultures in Williams Creek and Uncle Ike allotments. These areas would cease to support wintering deer. Displacement to adjacent habitat would occur. Carrying capacity of crucial mule deer winter range would be reduced in these allotments however, sufficient winter range will remain to support an additional 400 animals in the long term.

Elk

Impacts to elk would be the same as those discussed in Chapter 3 except for the additional livestock competition from cattle on Pass Creek and Warm Springs allotments. Elk numbers would increase by 250 animals in the long term. However, forage would be allocated for elk and the increased livestock competition should not affect the projected population growth of 250 animals over the long term.

Sage Grouse

Native range would be converted to crested wheatgrass on 42,000 acres (23%) of crucial sage grouse brood rearing habitat, and on 73,000 acres (46%) of crucial sage grouse winter range. This would reduce carrying capacity of the brood rearing habitat and eliminate the winter range. Stress and displacement would increase mortality and decrease birth rates. Increased livestock stocking levels in the spring would increase nest trampling and decrease brood survival. Sage grouse populations could decrease by 40 to 50 percent and annual brood success would be reduced.

Non-Game

Shrub cover and vegetation diversity would be drastically reduced on 92,500 acres of non-game habitat. Carrying capacity would be reduced. Stress and displacement could reduce population levels and species diversity for non-game in these areas. Ferruginous hawk population levels could be reduced significantly due to the elimination of the sagebrush aspect on 92,500 acres of hunting habitat.

IMPACTS TO AQUATIC WILDLIFE

Vegetation manipulation would have a temporary impact on the aquatic resource by increasing the possibility of higher sediment loads reaching the streams. However, subsequent increases in ground cover would reduce the overland movement of soil thus reducing sediment accumulation.

Spring developments are not expected to have an adverse impact on the aquatic resource.

Seasonal or deferred grazing systems are not expected to change the existing conditions for the streams involved: Summit Creek, Horse Creek, Badger Creek, Warm Springs Creek, Fallert Creek, Pass Creek and Little Lost River.

Rest rotation would allow good riparian growth, reduce siltation and lower fecal coliform bacteria during the rest phase. During grazed periods, conditions would be about the same as at present.

Removal of water gaps on Big Spring Creek and fencing of Wet Creek and Squaw Springs would increase the fish population by about 10, 50, and 50 percent, respectively.

IMPACTS TO LIVESTOCK GRAZING

Authorized livestock use would be at the same level as the proposed action for the short term (5 years) to allow vegetation treatments to mature. When the 95,500 acres of vegetation treatment are ready for grazing, stocking rates would be increased by 2,607 AUMs. This would replace all reductions made in allotments with vegetative treatments. Allotments without planned vegetation treatments would receive no increase in AUMs over the proposed action level. Total authorized use with this alternative would be 27,164 AUMs during the short term and 29,771 AUMs after three to five years, and could be 46,734 AUMs at the long term if all increases in forage were allocated to livestock (Table 8-12). Wildlife forage allocations would be the same as in the proposed action.

I. Allocation of Forage

A. Net Impacts to Existing Livestock Numbers

Under this alternative, livestock numbers would increase in those allotments where vegetative treatments are planned and reductions have been made. The increase in livestock numbers (on the basis of cattle for six month grazing season) would be 435 cattle after five years.

Under the maximize livestock alternative, the following allotments would get the increases, over the proposed initial stocking rate, after the short term:

Spring Canyon	889 AUMs
Pass Creek	900 AUMs
Warm Springs	356 AUMs
Williams Creek	164 AUMs
Jumpoff	198 AUMs
Sinks	77 AUMs
Briggs	23 AUMs
	2607 AUMs

TABLE 8-12

PRESENT AUMs AVAILABLE TO LIVESTOCK COMPARED TO PROJECTED AUMs AVAILABLE TO LIVESTOCK UNDER THE MAXIMIZE LIVESTOCK ALTERNATIVE

ALLOTMENT	AUMs	
	Initial	Long Term
Deferred		
Bear Canyon	327	390
Bell Mountain	486	597
Bernice	919	1,418
Horse Creek	643	710
Cedarville	3,767	3,862
Howe Peak	2,400	8,700
Mahogany Butte	1,810	5,740
Sinks	1,434	1,511
Wet Creek	602	693
Wigwam Butte	861	1,630
Sub Total	13,249	25,251
Rest Rotation		
Hawley Mountain	5,612	6,546
Jumpoff	562	844
Pass Creek	1,055	1,619
Spring Canyon	2,090	3,282
Uncle Ike	903	3,235
Warm Springs	1,285	1,855
Williams Creek	171	387
Sub Total	11,678	17,768
Seasonal		
Briggs Canyon	697	1,963
Burnt Canyon	505	544
Cedar Point	92	92
Eight Mile Canyon	51	51
Kyle Canyon	43	53
Sawmill	579	701
Summit	270	311
Sub Total	2,237	3,715
Total	27,164	46,734

Over the long term planned vegetative treatments under this alternative would yield approximately 19,570 AUMs which could be allocated to livestock. If all increases in forage were allocated to cattle over a six month grazing season there could be an additional 3,262 cattle using the ES area after 15 years.

B. Net Impacts to Length of Grazing Season

Since grazing seasons would be set on phenological data, this alternative would not change grazing seasons from those listed in the proposed action.

C. Net Impacts to Livestock Performance

Stocking rates would be based on vegetative productions. Therefore, the cattle to forage ratio would not change from that in the proposed action. Therefore impacts to livestock performance would be the same as those listed in the proposed action.

II. Implementation of Grazing Systems

A. Net Impacts to Existing Livestock Numbers

Grazing systems under this alternative would be the same as those planned under the proposed action. Therefore, the impacts would not differ from the proposed action.

B. Net Impacts to Length of Grazing Season

Grazing seasons would be set by plant phenological development so there would be no impact.

C. Net Impacts to Livestock Performance

Impacts to livestock performance would be the same as those listed under the proposed action.

III. Vegetation Manipulations

A. Net Impacts to Livestock Numbers

If all available forage from the proposed vegetative treatments was allocated to livestock, the following allotments would have increased livestock numbers at the long term.

Bernice	652 AUMs	=	107 Cattle*
Howe Peak	3,550 AUMs	=	592 Cattle
Mahogany Bt.	5,457 AUMs	=	910 Cattle
Sinks	3,550 AUMs	=	592 Cattle
Jumpoff	500 AUMs	=	83 Cattle
Pass Creek	1,022 AUMs	=	170 Cattle
Spring Cyn.	2,413 AUMs	=	402 Cattle
Uncle Ike	1,413 AUMs	=	236 Cattle
Warm Springs	640 AUMs	=	107 Cattle
Williams Ck.	217 AUMs	=	36 Cattle
Briggs Cyn.	156 AUMs	=	26 Cattle
	19,570 AUMs		3,262 Cattle

*Cattle numbers figured by taking the total AUMs over a six month grazing season.

B. Net Impacts to Length of Grazing Season

Grazing season would be set on plant phenology so vegetative manipulations would have no impact on the length of grazing season.

C. Net Impacts to Livestock Performance

Forage from vegetative treatments would be allocated on a basis of available forage. Therefore, the forage to livestock ratio would not be a change over that in the proposed action. So even though livestock numbers may increase, there could be no additional impacts on livestock performance than that listed in the proposed action.

IV. Range Improvements

Range improvements would remain the same as those disucssed in the proposed action. Therefore, no additional impacts would be expected under the maximize livestock alternative.

IMPACTS TO WATER RESOURCES

Vegetation manipulation on 95,500 acres would have a temporary short term impact on water quality. Removal or modification of ground cover would increase the amount of soil entering the waterways. However, the impact would be minimal and would be restricted to one growing season. The long term impact would be a slight reduction in siltation.

Implementation of the fencing projects on Wet, Squaw, and Big Spring Creeks, and restricted grazing on Deer and Birch Creeks would have the same impacts as described in Chapter 3 which includes reduced siltation and lowered fecal coliform bacteria counts.

IMPACTS ON CULTURAL RESOURCES

Impacts presently occurring to cultural sites would continue. The vegetation treatment on 95,500 acres of Public Land would disturb numerous cultural resource sites which were not detected during project surveillance.

IMPACTS TO RECREATION

The planting of 95,500 acres of non-native grasses would have a adverse impact on most wildlife. This would decrease hunting and the number of big game hunting days spent in the area from 25 to 30 percent. Sightseeing would also be adversely affected because of the large plantations of non-native grasses.

The predicted long term beneficial impacts on water quality and fish populations could result in an increase of about 500 fishing days in the Little Lost drainage. Fencing of campsites and improved fishing would enhance the recreational experience for campers and fishermen.

IMPACTS ON VISUAL RESOURCE MANAGEMENT

The planting of 95,500 acres of non-native grasses in the ES area would have an impact on the visual resource on all Class II areas. Line, color and texture would all be affected and the VRM class could change from Class II to III.

IMPACTS ON WILDERNESS

The proposed action, as mitigated by the standard operating procedures, would have no impacts on the suitability of the area for wilderness potential.

Levels of use will be the same or lower than those existing on October 21, 1976. Implementation of grazing systems and adjustments in season of use will enhance vegetation conditions which in turn, will improve scenic qualities.

Construction of supporting facilities will cause slight short term impacts from disturbance of surface and impairment of visual quality. Projects causing long term surface impairment or which cannot be removed would not be permitted in wilderness study areas and would therefore, not cause long term impacts.

SOCIO-ECONOMICS

Since initial stocking rates are the same as the proposed action, the short term impacts from this alternative would be the same (see Chapter 3). The social values and attitudes identified in Chapter 3 would also occur.

In the long term, big game hunting days would decrease to 1,399 (-516) and fishing days would increase to 11,900 (+5,000). Total study area expenditures would increase $176,500 (1977 dollars) as a result of these changes (Table 8-13).

In the long term small sized operators could receive an additional 268 AUMs. This would bring the average BLM AUMs for small operators to 821. This is an increase of 69 percent above the 1977 licensed use. The average increase in income would be $3,703 or $66,649 for the entire size class (1977 dollars).

Intermediate sized operators could gain 1,004 AUMs above their current active qualified demand. This would be a 120 percent increase over their current (1977) licensed use. This would lead to an average income increase of $16,365 or $196,380 for the entire (12 operators) size class (1977 dollars).

The total annual increase in rancher income (small and intermediate) in the long term would be $263,029.

TABLE 8-13

BIG GAME HUNTING AND FISHING EXPENDITURES
ALTERNATIVE 3 (MAXIMUM VEGETATIVE REHABILITATION)

Activity	1977 1/ Visitor Days	Expenditures 2/ Per Day	Visitor Days At End Of 15 Years	Change 3/ In Annual Expenditures	Interindustry 4/ Multiplier	Total Change In Expenditures
Big Game Hunting	1,915	$54	1,399	-$27,864	1.336	-$37,226
Fishing	6,900	$32	11,900	+$160,000	1.336	+$213,760
Totals	8,815	-	13,299	+$132,136	1.336	+$176,534

1/ From Chapter 2, Recreation Section
2/ Utah Fish and Game - Division of Wildlife Resources
3/ In 1977 Dollars
4/ Calculated by the Dynamic Regional Analysis Model (DYRAM), BLM, 1978.

ALTERNATIVE #4

ELIMINATION OF SPRING, LATE FALL AND WINTER GRAZING

The purpose of this alternative would be to eliminate spring, late fall and winter grazing on the Public Lands. No livestock use would be allowed from October 31 to June 15 each year. The removal of livestock from the public range would increase vigor during the spring because carbohydrate resources would remain high without grazing. In addition, there would be no competition for wildlife for available forage during this period, and livestock interactions on crucial fawning areas and sage grouse brooding areas would not occur.

Authorized livestock use would be limited to the summer season and would be 10,339 AUMs, which is 19,525 AUMs below the current authorized use. One allotment would be proposed for rest rotation, 16 for deferred and 7 for seasonal grazing management systems (Table 8-1).

Initial wildlife allocations would be the same as for the proposed action, 10,453 AUMs. At the end of 15 years there would be an additional 3,160 AUMs available to wildlife.

Range improvements would consist of 47.3 miles of fence, 65.4 miles of water pipeline, 38 water troughs, three spring developments, six reservoirs, and one storage tank (Table 8-1). These projects would be needed to provide for proper livestock distribution during the grazing period.

IMPACTS TO VEGETATION

Introduction

The primary impacts to vegetation as a result of grazing under this alternative would be:

A. Season of Use - In order to meet the phenological requirements of major forage species spring turnout dates would be set back on allotments between 30 and 75 days (see Table 3-1).

The later turnout date would allow plants to start spring growth and to replace 50% to 75% of the needed root reserves prior to grazing. Major forage plants would have the growth needed to improve vigor and to be ready to start seed production prior to any livestock grazing. No allotment would be grazed during the early to mid phenological development stages of major forage plants. Animals would be available to trample and plant seed. Livestock would be removed when light to moderate grazing had taken place.

B. Grazing Systems - The impacts to vegetation as a result of implementing grazing systems would be the same as those listed under the proposed action because grazing systems developed for this alternative would be very similar to those in the proposed action.

C. Range Improvements - The impacts to vegetation from range improvements would be identical to those listed under the proposed action.

D. Vegetation Treatments - Since vegetation manipulation treatment would not occur, no impacts would occur.

E. Level of Stocking - Under this alternative livestock numbers would be the same as those planned under the proposed action. However, the shortened grazing season and later spring turnout would result in a light to moderate stocking rate. Under the proposed action the stocking rate was figured for a certain number of animals over a specified grazing season. Under this alternative, the livestock numbers will remain the same as those under the proposed action but the season would be shortened. Therefore, the level of use would be 16,825 AUMs less than the proposed action. This level of grazing would allow vegetation to receive all the benefits of grazing (seed trampling, stimulated vigor, etc.), without any of the negative impacts of grazing (repeated defoliation, grazing of plants drawing on root reserves etc.). Therefore, vegetation would be expected to improve rapidly.

Summary of the impacts of the components of the summer only alternative on vegetation: Under this alternative, grazing would not start until well after the critical early stages of vegetative development. Grazing systems are proposed to allow the vegetation periodic relief from grazing to allow the phenological and biological development stages of important species to be completed. Range improvements are planned to allow for livestock control and to make potentially suitable range into suitable range, thus distributing the grazing demand over a much greater area. Vegetative treatments are planned to make areas of poor condition but good productive potential into productive range which can be used to minimize the grazing demand on adjacent native areas. The level of stocking would be adjusted to reduce grazing demand to 16,825 AUMs below the livestock forage producing capacity of the ES area. Therefore, the net impact to vegetation would be positive as a result of this alternative.

Trend - The summer grazing alternative would produce improvements in vegetative trend over the 15 year period. The 837 acres currently in downward trend would be eliminated. Acres in stable trend would go from 163,559 to 211,673. Acres in upward trend would change from 211,673 to 164,396. Generally, it is expected that areas presently in downward trend would be stabilized, areas presently in stable trend would change to upward trend and the areas presently in upward trend would stabilize at good or excellent condition. See Table 8-14 for specific trend changes.

Production - The summer grazing alternative would increase total annual available forage from 16,633,600 pounds to 33,164,800 pounds in 15 years.

Condition - The summer grazing alternative would result in the following condition class changes over the 15 year period: Excellent condition from 2,766 acres to 69,306 acres; good condition from 135,508 acres to 137,383 acres; fair condition from 112,498 acres to 80,391 acres; and poor condition range from 102,588 acres to 66,280 acres. For specific projections on changes in vegetation condition see Table 8-14.

TABLE 8-14

ALTERNATIVE IV - NO GRAZING OCTOBER 31 TO JUNE 15

FUTURE CONDITION, TRENO, SUITABILITY, AND PRODUCTION BY ALLOTMENT

Allotment	CONDITION					TRENO		SUITABILITY			PRODUCTION
	Excellent	Good	Fair	Poor	Up	Stable	Down	Suitable	Potsuitable	Unsuitable	AUMs
Bear Canyon	1,647	1,606	12	0	0	3,265	0	3,185	0	353	478
Bell Mountain	4,288	1,689	656	0	0	6,633	0	6,633	0	0	911
Bernice	2,793	10,061	5,423	2,328	6,238	14,367	0	19,284	0	3,403	1,432
Horse Creek	173	3,536	583	110	2,439	2,999	0	5,448	0	111	980
Cedarville	2,620	6,750	0	4	0	18,147	0	16,707	0	2,948	4,673
Howe Peak	698	5,931	3,263	15,543	17,612	10,366	0	27,708	0	3,778	3,296
Mahogany Butte	80	15,221	24,800	10,343	33,833	16,611	0	49,304	0	3,147	2,618
Sinks	0	2,311	2,520	14,409	12,899	6,341	0	17,605	0	2,176	2,071
Wet Creek	591	3,188	1,017	301	471	5,846	0	6,397	0	409	806
Wigwam Butte	2,021	4,001	5,959	2,293	7,074	7,200	0	13,605	0	1,682	1,079
Sub Totals	14,911	54,294	44,233	45,331	80,566	91,775	0	165,876	0	18,007	18,344
Hawley Mtn.	28,796	31,525	2,615	0	14,194	53,095	0	66,639	0	5,016	8,821
Jumpoff	2,433	2,686	2,245	5,511	10,228	3,157	0	5,282	7,634	1,761	1,261
Pass Creek	5,059	7,949	2,695	0	11,605	5,789	0	15,973	0	1,975	2,152
Spring Canyon	711	12,377	10,564	11,619	10,426	24,845	0	34,045	0	2,960	3,231
Uncle Ike	3,978	13,764	7,502	2,226	16,598	10,872	0	28,815	1,500	557	1,766
Warm Springs	2,125	2,011	0	0	4,478	2,231	0	6,577	0	134	1,662
Williams Creek	0	1,724	2,627	795	3,623	1,523	0	4,932	0	429	550
Sub Totals	43,102	72,036	28,248	20,151	71,152	101,512	0	162,265	1,934	12,832	19,443
Briggs Canyon	2,842	5,461	6,240	86	9,548	5,091	0	14,544	0	147	1,324
Burnt Canyon	1,892	2,592	447	0	0	4,931	0	5,656	0	57	819
Cedar Point	0	799	45	325	969	200	0	1,057	0	217	192
Eight Mile Canyon	0	31	936	387	1,354	0	0	960	0	724	79
Kyle Canyon	445	105	0	0	0	550	0	492	0	219	53
Sawmill	4,071	1,295	0	0	807	4,559	0	5,256	0	584	829
Summit	2,043	770	242	0	0	3,055	0	2,862	0	354	373
Sub Totals	11,293	11,053	7,910	798	12,678	18,386	0	30,827	0	2,302	3,669
Totals	69,306	137,383	80,391	66,280	164,396	211,673	0	358,968	9,134	33,141	41,456*

*This total is the present AUMs that which would be allocated of (20,792 AUMs) and the additional AUMs that would be available after 15 years (20,664 AUMs).

The predicted changes in vegetation condition (see Table 8-14) are based on the premise that this alternative would improve stocking rates management, distribution, and season of use for livestock. Vegetation trend is stable to slightly upward over most of the ES area under the present management, therefore improved condition is expected under this alternative. A conservative prediction is that all suitable areas would increase one condition class in the 15 year time frame. Unsuitable or potentially suitable areas would remain in the same condition class because these areas are generally in good condition and use levels would remain unchanged or would slightly increase.

Threatened and Endangered Plants

No impacts would occur to the threatened and endangered plants listed in Table 2-6.

IMPACTS ON SOILS

Increased vegetation would cause a slight, unmeasureable decrease in sediment yield, but since the soils already have a low erosion condition class 1 title improvement would occur.

IMPACTS ON TERRESTRIAL WILDLIFE

Elimination of livestock grazing before June 15th would reduce competition for food, water, cover and space, particularly for wildlife that produce in the spring, or 95% of all species. Elimination of livestock grazing after October 31st would reduce competition for forage and adverse impacts to the quality of winter habitats.

Cattle use between June 15th and October 31st would help stimulate forb and shrub growth. Forbs are in the late stages of development by June 15th and livestock grazing after this time would help trample forb seeds. Livestock use would be concentrated on grasses during the summer which would aid the competitive advantage of forbs and shrubs (which are primary food sources for big game and upland game in the ES area).

Riparian vegetation would still receive heavy livestock use under this alternative. However, by eliminating livestock use before June 15th, the critical growth cycle for grasses and forbs would be in the late stages, and damage to riparian vegetation might be less than under the existing environment or proposed action. Increased carrying capacity and decreased mortality for species using riparian zones would occur.

Impacts from water development would be the same as those discussed in Chapter 3.

Antelope

Antelope would benefit from this alternative. Competition for forage, space, and cover would be significantly reduced. Stress and displacement would be reduced. Forb and shrub production would increase and provide more forage and cover to antelope. Carrying capacity would increase. Decreased mortality would increase population levels. The antelope population could increase by about 3,000 animals under this proposal.

Mule Deer

Mule Deer would benefit from this alternative. Impacts would be the same as those discussed under antelope. Mule deer forage for an estimated increase of 650 animals could result.

Elk

Elk would benefit from this alternative. Reduction in livestock use would provide more forage for elk and would decrease stress and displacement from social interactions. Carrying capacity would increase for elk which would help provide for the rapidly increasing elk populations.

Sage Grouse

Reduced spring livestock use would reduce physical disturbance of nesting grouse. Competition for forage, cover and space would be reduced. Riparian areas would provide excellent habitat to sage grouse before June 15th. Most of the nesting activity would be completed by this time, and new broods would be mobile. Increased carrying capacity and nesting success would occur. Mortality from stress and displacement would be reduced. Brood rearing success could increase throughout the ES area if other factors (weather, predation, human disturbance) remained constant.

Non-game

Non-game would benefit from this alternative. Increased cover would be available. Forage availability would increase for species dependent on vegetation for food. Riparian zones would provide excellent habitat to non-game prior to June 15th. Fluctuations in non-game populations would be less dramatic due to a more stable ecosystem. Ground nesting species and sensitive species such as the ferruginous hawk and burrowing owl would benefit due to the decreased physical disturbance during nesting. Carrying capacity would increase, and stress and displacement would decrease. Population levels of non-game would increase in the long term.

IMPACTS ON AQUATIC WILDLIFE

Aquatic habitat conditions are not expected to change from the proposed action. Fencing of Wet Creek and Squaw Springs and the removal of water gaps in Big Spring Creek would have the same impacts as those described in Chapter 3.

Active livestock use would be limited to the summer season. Substantial reductions in livestock AUMs would be necessary. Active use analyzed under this alternative is 10,339 livestock AUMs.

Wildlife allocations would be the same as in the proposed action. Range improvements and grazing systems for this alternative would remain the same as the proposed action and are shown in Table 8-1.

I. Allocation of Forage

A. Net Impacts to Existing Livestock Numbers

Under the summer use only alternative, livestock use would be limited to the numbers listed in the proposed action. However, since the season would be shortened, the actual use would be less. Under this alternative livestock numbers would be 0 in allotments which have present use seasons prior to June 15 or after October 21. Livestock numbers would equal the proposed action stocking rate in those allotments which have present seasons beginning after June 15 or ending before October 31.

The initial stocking rate would be 10,339 AUMs (see Table 8-1 for initial allocation by allotment). At the end of 15 years there would be 17,504 AUMs available from improved management which could be allocated to livestock use (Table 8-15).

B. Net Impact to Length of Growing Season

Forage allocation under this alternative would limit the grazing season from June 16 to October 31. This season would be considerably shorter in many allotments than the grazing seasons planned under the proposed action (see Table 8-1 for grazing seasons by allotment under this alternative).

C. Net Impacts to Livestock Performance

Less of the total forage will be allocated to livestock than is allocated under the proposed action (27,164 AUMs compared to 10,339 AUMs). Actual forage available will be the same under this alternative and the proposed action. Therefore, the reduced numbers of livestock would be able to select the most desirable forage and would probably show improved performance.

II. Implementation of Grazing Systems

A. Net Impacts to Livestock

Implementation of grazing systems under this alternative would have the same impact to livestock as that expected under the proposed action.

TABLE 8-15

PRESENT AUMs AVAILABLE TO LIVESTOCK COMPARED TO FUTURE AUMs AVAILABLE TO LIVESTOCK UNDER THE NO LIVESTOCK GRAZING FROM OCTOBER 31 TO JUNE 1

ALLOTMENT	AUMs	
	INITIAL	LONG TERM
Bear Canyon	264	371
Bell Mountain	155	531
Bernice	0	834
Horse Creek	167	629
Cedarville	723	3,391
Howe Peak	0	2,125
Mahogany Butte	120	1,837
Sinks	923	1,357
Wet Creek	540	670
Wigwam Butte	0	808
Sub Totals	2,892	12,553
Hawley Mountain	2,617	5,939
Jumpoff	300	594
Pass Creek	634	1,354
Spring Canyon	842	2,160
Uncle Ike	229	1,058
Warm Springs	1,028	1,428
Williams Creek	45	203
Sub Totals	5,695	12,736
Briggs Canyon	326	848
Burnt Canyon	548	548
Cedar Point	0	78
Eight Mile Canyon	0	43
Kyle Canyon	48	52
Sawmill	560	680
Summit	270	305
Sub Totals	1,752	2,554
Totals	10,339	27,843

CHAPTER 9
CONSULTATION AND COORDINATION

CHAPTER 9

CONSULTATION and COORDINATION

Introduction

This chapter discusses the consultation and coordination conducted in preparation of the environmental statement (ES). The discussion includes consultation, coordination and public involvement efforts for the planning leading up to the ES the development of the proposal and preparation of the draft ES. Agencies, organizations and individuals that will be requested to submit written comments on the draft ES are listed in the last section.

History of Public Participation Efforts

On October 31, 1977, the Idaho Falls District sent a general information letter to the Little Lost-Birch Creek grazing permittees, other agencies, groups, universities and interested individuals which discussed the inventory process and ES preparation schedule. Recipients of the letter were requested to respond if they wished to participate in preparation of the ES or make comments. Many comments and responses were received.

Also during October, all District resource specialists were told to fill out Form 1600-16 for any public contacts which generated information relative to the ES. These completed forms were used as part of the ES and planning public input.

On November 30, 1977, the BLM held a joint meeting with the SCS to present the results of the soil survey for the ES area and discuss how those results would be used in the statement. BLM and SCS representatives as well as local ranchers and representatives of the DOE and the U.S. Sheep Experiment Station were in attendance.

On March 14, 1978, District personnel presented a TV program on the wildlife inventory and major wildlife issues to be addressed in the ES. A similar program was also presented to the Fifth District Wildlife Federation on January 8, 1978; to the Upper Snake River Federal Executive Association on March 16, 1978; and to the AEC Sportsmen's Club on April 21, 1978.

On June 1, 1978, the District conducted a Range Tour of the ES area to explain inventory efforts, how the inventory results would be used in the statement, and some of the major issues and conflicts in the ES area. Local ranchers, as well as representatives of the SCS, Idaho State University, Tri-County Cattlemen's Association, Custer County Resource and Economic Stabilization Committee, the Idaho Wildlife Federation, Idaho Department of Public Lands, East Central Idaho Planning and Development Association, Senator James McClure's office, Idaho Fish and Game, U.S. Sheep Experiment Station and the Butte County Agent were in attendance. Many helpful comments were received during the tour, and several written comments were received after the tour.

During the first two weeks of July, 1978, District representatives met individually with the grazing permittees in the ES area to tour the allotments and discuss the ranchers' needs in relation to tentative management systems, range improvements, allotment carrying capacities, etc. Useful input and many productive ideas were generated through these interviews.

On July 19, 1978, the District called together a technical work group of five people who represented the predominant interests and issues in the ES area. This group met again on August 3rd and 8th, 1978. The purposes of the group were to: 1) take a look at the data that had been collected; 2) look at the methods used to determine allotment carrying capacities; 3) look at other problems and mitigation measures; and 4) help analyze all these factors to come up with some professional, reasonable and workable methods to allocate forage and work out resource trade offs. The work group analysis was conducted on an allotment by allotment basis and many helpful comments were generated.

On August 15, 1978, a public meeting was held at Howe to outline some of the MFP results. Local ranchers as well as representatives of Tri-County Cattlemen's Association, Custer County Resource and Economic Stabilization Committee and Clark Co. Stockmen were in attendence. Written as well as oral comments were received.

On August 16, 1978, a second public meeting was held at Idaho Falls on preliminary MFP results. Participants included state political representatives, U.S. political representatives, ranchers, and representatives of the Idaho Wildlife Federation, ORV and recreation groups, Lost River-Lemhi Wilderness Council, IDPL, IDFG and Idaho State University. Written and oral comments were received.

On October 19, 1978, a status update letter was sent to all grazing permittees to advise them of progress with the proposed action and economic impacts assessment. During the first two weeks of January, 1979, the District Manager and the Area Manager met individually with the permittees to explain the details of the proposed action for their specific allotments. The discussions included: proposed grazing systems; range improvements; vegetation manipulation; stocking rates and seasons of use. Comments were received from the operators on various aspects of the proposed action

On July 5, 1978, the BLM contracted with the University of Idaho Extension Service to have Steve Publes, Fremont County Extension Agent, serve as a liaison with the ranching community and provide PDES and DES review from the standpoint of the livestock industry. Mr. Publes visited the ES area with the Team Leader in September, 1978, and provided comments on the proposed action and economic impacts assessment.

History of Required Interagency Contacts

The University of Idaho conducted an inventory of threatened and endangered plants in the planning unit during the summer of 1978. FWS formally reviewed the results of the inventory on August 28, 1978.

The District wildlife biologist conducted informal consultations with FWS on threatened and endangered animals in the unit on September 21, 1978. The FWS representative indicated that no formal consultation would be necessary under Section 1 of the Endangered Species Act because no significant impacts to threatened or endangered species are anticipated.

The District archaeologist consulted with the State Historic Preservation Officer on December 8, 1978, and on March 8, 1979 in accordance with Section 106 of the National Historic Preservation Act. The SHPO indicated that he had no concerns over impacts of the proposed action because mitigation measures are satisfactory.

History of Informal Contacts

The Area Manager has had periodic contacts with representatives of the DOE, FS, and IDPL in developing proposed grazing systems, range improvements and vegetation manipulation projects. These representatives have provided input to developing the proposal, and written comments in the draft ES will be solicited from them.

The Resource Area wildlife biologist has maintained frequent contact with IDFG representatives throughout the inventory process, development of the proposal and preparation of the draft ES. Written comments will be solicited from IDFG in the draft ES.

BLM representatives from DSC held informal consultations with the permittees, and Butte Co. Agent, the Production Credit Association, the Federal Land Bank and the Farmers Home Administration in developing the economic sections.

BLM representatives consulted with Idaho State University and Washington State University in developing the forage allocation methodology.

Comments on the draft environmental statement will be requested from the following agencies and interest groups.

Federal Agencies

National Advisory Council on Historic Preservation
Public Lands Council

Department of Energy

Department of Interior
- Fish & Wildlife Service
- Geological Survey

Bonneville Power Administration
Heritage Conservation & Recreation Service
National Park Service

Department of Agriculture
- Agriculture Stabilization & Conservation Service
- Environmental Protection Agency
- Farmer's Home Administration
- Forest Service
- Sheep Experiment Station
- Soil Conservation Service

State Agencies

- Bureau of Community Affairs
- Dept. of Health, Welfare, and Environmental Services
- East-Central Idaho Planning & Development Association
- Idaho Bureau of Mines and Geology
- Idaho Dept. of Fish & Game
- Idaho Dept. of Highways
- Idaho Dept. of Public Lands
- Idaho Dept. of Water Resources
- Parks & Recreation Dept.
- State Historic Preservation Officer
- University of Idaho Extension Service

Local Agencies

- Arco Mayor
- Butte County Agent
- Butte County Commissioners
- Butte County Planning Commission
- Clark County Agent
- Clark County Commissioners
- Clark County Planning Commission
- Custer County Agent
- Custer County Commissioners
- Custer County Planning Commission
- East Central Idaho Planning and Development Association
- Idaho Falls Mayor

Elected Officials

Federal

Senator Frank Church
Senator James McClure
Congressman George Hansen

State

Senator Vearl Crystal
Senator Marsden Williams
Rep. Raymond Insanger
Rep. Kert Johnson
Rep. Wendell Miller
Rep. Wayne Tibbitts

Public Service Organizations

Lost River Electric
Public Lands Council
Public Utilities Commission
Utah Power & Light

Other Organizations

AEC Sportsmens' Club
Alpine Club
American Fisheries Society
Blackfoot Motorcycle Club
Butte County Drift Skippers
Clark County Sportsmen's Club
Custer County Resource & Economic Stabilization Committee
Eagle Rock Long Rifle Association
Idaho Conservation League
Idaho Environmental Council
Idaho Falls Gem & Mineral Society
Idaho Motorcycle Association
Idaho Motorcycle Club
Idaho Nuclear Sportsmen's Club
Idaho Outdoor Association
Idaho State University
Little Lost-Birch Creek Grazing Permittees
Lost River-Lemhi Wilderness Council
National Outdoor Coalition
Ricks College
Sierra Club
Snake River Audobon Society
Snow Snoopers Snowmobile Club
Southeast Idaho Rod & Gun Club
Tri-County Cattlemen's Association
Trout Unlimited
University of Idaho
Upper Snake River Valley Bowmen

APPENDICES

APPENDIX 1-1

ECOLOGICAL SITE INVENTORY METHOD

Stated simply the Ecological Site Inventory Method (ESIM) is a determination of the current resources of an ecological site and a calculation of the current and the potential vegetative productivity. As used in the collection of information for this ES the ecological sites are the equivalent of the Soil Conservation Service range sites as defined in the SCS Range Handbook. An SCS range site is basically determined by the soil and the annual precipitation. The present vegetative cover may or may not be the vegetation that would occupy the site under a different ecological condition. The ESIM procedure consists of identifying the ecological sites (range sites) through (1) a soil survey, (2) by determination of current site productivity and condition through clipping and weight estimation studies, and (3) by determination of potential vegetative cover and productivity through comparison with other site records and relict areas.

A soil survey was not available at the start of the studies so it was necessary to modify the ESIM to the extent that initially the ecological sites were selected and inventoried on a basis of current vegetative typing. Some sites were added and others dropped as the soil survey progressed and more precise information became available. Condition class areas were further delineated through additional condition class writeups using criteria of BLM form ISO-4400-1, Range Condition Work Sheet. The on site survey also included a soil surface factor watershed rating, a fecal count and a brush count and brush form class rating.

The current production data was used to calculate the production of each vegetative species, by pastures by allotment. This information was then used, along with wildlife requirement data and range suitability criteria, to allocate the current available forage to the various resource uses of livestock, big game wildlife, and watershed. Other resource requirements such as water quality, fisheries, recreation, visual impacts, other wildlife and cultural resources needs and protection requirements were also considered in the forage allocation.

The potential production as compared to the current production and current condition was used as a guide to set goals for production and condition class improvement.

APPENDIX 1-2

METHODOLOGY FOR FORAGE ALLOCATION

Determination of AUMs and Animal Equivalents

One Animal Unit Month (AUM) is equal to 800 pounds of air dry forage. The following grazing animal equivalents were used to determine AUMs for various animals.

Animal	No. of Animals one AUM will Support
Cattle	1.0
Horse	1.0
Sheep (domestic)	5.0
Antelope	9.4
Mule Deer	6.0
Elk	1.5

Idaho Department of Fish & Game (IDFG) provided big game population numbers and identified big game use areas. Forage was allocated for existing populations of elk and antelope.

Although elk and antelope are increasing in the ES area, limiting factors to population growth are not totally understood. Both elk and antelope populations presently are higher than ever recorded. The vegetative inventory and forage allocation process indicated that present elk populations are near carrying capacity for their existing ranges. Climatic influences (snow depth, spring rainfall, temperature) could result in annual fluctuations in antelope populations. Elk and antelope populations will be monitored and increases in forage production expected from improved livestock management could be available to provide for population increases. Mule deer populations are presently below carrying capacity. To ensure adequate forage to support deer populations near carrying capacity, forage was allocated to accommodate a 25% increase in the Little Lost Valley and a 10% increase in the Birch Creek Valley.

Proper Use Factor Process

Total biomass was determined through the SCS modified Ecological Site Inventory Method (ESIM) for public lands (BLM). (See Appendix 1-1). (A detailed outline of the ESIM is available at the Idaho Falls District Office.)

A Normal Year Correction Factor was applied to all forage species to adjust the total forage estimations to the average annual production. Information obtained from local weather stations was analyzed to estimate the differences in precipitation between the sample year (drought of 1977) and the 20 year average. Forage estimations were increased by varying amounts (10% - 20%) throughout the ES area according to the amount and timing of precipitation in 1977.

Proper use factors (PUF's) were applied to the adjusted vegetative estimations by plant species to determine available forage for each animal species (see attachment #1 for the Warm Springs Allotment. All attachments for this discussion are based on the Warm Springs Allotment as an example.) "Proper use" for a particular plant is the degree to which its current growth will be utilized by grazing animals when the range is properly used. PUF's were supplied by the Idaho State Office. The PUF's were based on literature review of dietary preferences of big game and livestock, and phenological requirements of forage plants. These PUF's were modified by the Idaho Falls District Office if field observations by inventory personnel indicated that the statewide PUF's were not applicable to the ES area. The PUF for an individual plant species varies by animal species and by season; therefore, available forage also varies accordingly.

As illustrated in Attachment 1, total available forage for an allotment was based on the sum of the pounds of available forage from the highest PUF for each plant species. Available forage is greater in the summer than in the spring and greater in the fall/winter than in the summer because the PUF's increase by season. (For example, the cattle PUF's for Agsp are: Spring-30; Summer-40; Fall/winter-50).

Pounds of available forage were divided by 800 to come up with available AUMs. All grass and forbs AUMs were lumped into one category and shrubs AUMs were kept in a separate category. Grasses and forbs were combined due to the low production estimates on forbs. Forb production fluctuates annually, depending on the amount and timing of precipitation. The drought conditions of the sample year and the short period during early spring when forb production could be adequately estimated made the data on forb production unreliable. Forbs were combined with grasses rather than shrubs based on the assumption that the grazing animals would prefer grasses over shrubs when forbs were not available. Competition between livestock and big game for forbs is recognized as a significant conflict in the ES area. However, available data are insufficient to attempt to resolve this conflict through forage allocation.

Use Areas

Most allotments are used by more than one grazing animal during the various seasons so each allotment was divided into specific Use Areas. Use Areas were determined according to suitability for livestock grazing and the big game species using an area during the various seasons. (Suitability criteria included percent slope, distance from water, rangeland productivity, and erosion susceptibility. Appendix 2-4 explains these criteria in more detail).

The Warm Springs allotment (6,711 acres) contains the following six Use Areas:

Livestock Suitability	Ungulates Involved	Acres
Suitable	Cattle, Antelope, Deer, Elk	185
Suitable	Cattle, Antelope	6,350
Potentially Suitable	Antelope, Deer, Elk	25
Potentially Suitable	Antelope	15
Unsuitable	Antelope, Deer, Elk	96
Unsuitable	Antelope	40
		6,711

Water was usually the limiting factor on potentially suitable range. Because the Warm Springs allotment contained only 40 acres of potentially suitable range, no water development was proposed. Therefore, in the Warm Springs allotment, forage in the potentially suitable Use Area was allocated to wildlife only.

State Lands

Where state lands occurred in BLM grazing allotments, big game use figures were adjusted in the Use Areas where the state lands occurred (refer to Attachment #6). In the Warm Springs allotment, 651 acres of state land occurred in the suitable cattle - antelope use area. Ten percent of that Use Area was state land, so the big game AUM requirements for that Use Area were reduced by 10% on BLM lands. This 10% reduction amounted to 4 AUMs for spring, 5 AUMs for summer and 2 AUMs for fall/winter. No livestock forage was allocated from state lands.

The Idaho Department of Public Lands leases forage on these areas and Exchange of Use Agreements are authorized by the BLM. Although these lands occur throughout the ES area in BLM administered allotments, BLM did not allocate the forage.

Forage Allocation

Total available forage was computed for each Use Area. Forage was allocated by Use Area and by season. Uniform distribution of both wildlife and livestock within each use area was assumed. By allocating forage by Use Area rather than by the entire allotment, livestock and big game range overlap was automatically considered. Dietary overlap between big game and livestock was considered to determine competitive AUMs (refer to Attachment #3 for a listing of dietary preferences). In general, grasses and forbs were the most limiting factor to livestock allocations throughout the ES area. If livestock reductions were necessary, it was usually because grasses and forbs were insufficient to maintain proper use of the forage resource. Generally, shrubs were over abundant throughout the ES area. Therefore, competitive forage is that portion of the grass and forb allocation to wildlife that could be used to increase livestock stocking levels if the big game were removed from the range. Competitive AUMs are listed by allotment in Attachment #4.

The forage allocation procedure is shown in Attachment 5. Attachments 6 and 7 show the allocation procedure for the Warm Springs allotment. The following discussion refers to these Attachments.

Forage was allocated to wildlife first, by Use Area, according to dietary preferance. Attachment 6 shows the methodology used to determine wildlife AUM requirements by use area. For example, 150 antelope use the entire allotment in the spring. Forty AUMs are required to support these antelope:

$$\frac{150 \text{ (antelope)}}{9.4 \text{ (antelope/animal unit)}} \times 2.5 \text{ (months)} = 40 \text{ AUMs}$$

The number of AUMs required per acre of antelope range is .006:

$$\frac{40 \text{ AUMs}}{6{,}711 \text{ acres}} = .006 \text{ AUMs/acre}$$

To separate these AUMs by Use Area, the AUMs/acre figure is multiplied by the number of acres in each Use Area (refer to Attachment #6). Big game AUMs were divided into shrub AUMs and grass and forb AUMs by multiplying dietary percentages (Attachment #3) by the AUM requirement for each Use Area (refer to Attachment #7). For example, in the suitable cattle - antelope Use Area for spring, 34 AUMs x .45 = 15 grass and forb AUMs; 34 AUMs x .55 = 19 shrub AUMs. This procedure was carried out for all big game AUMs by Use Area. These AUMs were totalled for each Use Area and subtracted from the total available forage for the Use Area: 1001 AUMs of grasses and forbs and 248 AUMs of shrubs are available in the suitable cattle - antelope Use Area in the spring.

1001 - 15 = 986 grass and forb AUMs remaining
248 - 19 = 229 shrub AUMs remaining

Livestock forage was allocated from the remaining AUMs in suitable Use Areas and potentially suitable Use Areas where water would be developed. (In Warm Springs allotment, no water development was planned so only the suitable use areas were used for livestock allocations.)

Use Areas	Grasses & Forbs	Shrubs
Suitable - A	986	229
Suitable - DAE	10	4
	996	233

Dietary figures were applied to licensed cattle use.

257 AUMs X .93 = 239 grass & forb AUMs
257 AUMs X .07 = 18 shrub AUMs

Livestock AUMs were subtracted from the totals:

Grass & forbs	996 - 239 = 757 carryover AUMs
Shrub	233 - 18 = 215 carryover AUMs

A spring use factor was derived by dividing the carryover AUMs by the total available AUMs:

Grasses & forbs $\frac{\text{757 carryover AUMs}}{\text{1014 total available AUMs}}$ = 75% remaining

Shrubs $\frac{\text{215 carryover AUMs}}{\text{255 total available AUMs}}$ = 84% remaining

Use Factors were computed for each Use Area. These Use Factors were then multiplied by the total available AUMs for the summer Use Areas to adjust for the spring Use:

Suitable A	Total Available AUMs		Use Factor		Adjusted AUMs
Grasses & Forbs	1,292	X	.75	=	969
Shrubs	289	X	.84	=	243

Big game summer use was then subtracted from the adjusted AUMs and the remaining AUMs were used for livestock allocations (as explained for the spring season). The process was then repeated for the fall/winter season.

NOTE: In the Warm Springs allotment, three Use Areas were over-allocated in the fall/winter season. All of these areas are used by elk. Other elk Use Areas in the ES area were similarly overallocated. The 18 AUMs which were overallocated amount to one percent of the total fall/winter forage production. To eliminate this overallocation, livestock use would have to be reduced by over 1,000 AUMs in the suitable Use Areas. Unsuitable and potentially suitable areas were also overallocated. Livestock use reductions would not affect these areas because they are not used by livestock. The management decision was to allocate the livestock forage and monitor utilization, condition, and trend in the elk Use Areas. Thus, a potential problem area was identified, and future monitoring of this area will reveal the extent of conflict.

Summary

The methodology used for forage allocation was developed at the Idaho Falls District BLM during the MFP Step 2 process. The objectives were to achieve proper use of the forage resource by the combination of animal species (both domestic and wild) utilizing the ES area on an allotment basis. The system was devised to determine initial stocking rates of the allotments in the ES area in a logical, unbiased manner.

The system identified several problem allotments in the ES area and identified excess forage in other allotments. Livestock use was adjusted in these areas to reserve adequate forage for big game and distribute livestock use to maintain proper use in all allotments. When available AUMs were insufficient to meet an operator's historical livestock use, stocking rates were adjusted. Past licensed use was considered in all livestock allocations and reductions were made in terms of AUMs. It is the operator's option to take the reduction in the form of fewer livestock numbers or an adjusted season of use.

ATTACHMENT 1: The PUF for an individual plant species varies by season and animal species involved:

Class of Animal

D = Deer A = Antelope E = Elk C = Cow S = Sheep H = Horse

| VEGETATION | | | Proper Use Factor | | |

Attachment 1 (continued)

ALLOTMENT - WARM SPRINGS

Species List	Normal Year Correction Factor	X Production Sample Year	Avg. % Allowable Forage[1] (PUF) Cattle	Dom. Elk	Sheep	Deer	Antelope	Other	X lbs/ Total Forage[2] Cattle	Dom. Elk	Sheep	Deer	Antelope	Other	Total Allowable Forage lbs[3]
						SPRING									
AGSP	1.1	1477	30	20	---	30	---	---	487	325	0	487	0	---	487
AGSM	1.1	None													
ERIGE	1.1	None													
EROV	1.1	2	5	--	---	--	---	---	0	0	0	0	0	---	0
ARTRW	1.1	None													
ARTRV	1.1	320	--	5	---	15	20	---	0	18	0	53	70	---	70
						SUMMER									
AGSP	1.1	1477	40	40	---	10	---	---	650	650	0	162	0	---	650
AGSM	1.1	None													
ERIGE	1.1	None													
EROV	1.1	2	10	--	---	--	10	---	0	0	0	0	0	---	0
ARTRW	1.1	None													
ARTRV	1.1	320	--	10	---	10	20	---	0	35	0	35	70	---	70
						FALL/WINTER									
AGSP	1.1	1477	50	50	---	50	--	---	812	812	--	812	0	---	812
AGSM	1.1	None													
ERIGE	1.1	None													
EROV	1.1	2	--	--	---	--	--	---	0	0	--	0	0	---	0
ARTRW	1.1	None													
ARTRV	1.1	320	10	30	---	30	40	---	35	106	--	106	141	---	141

[1]Total % allowable regardless of competitive forage.

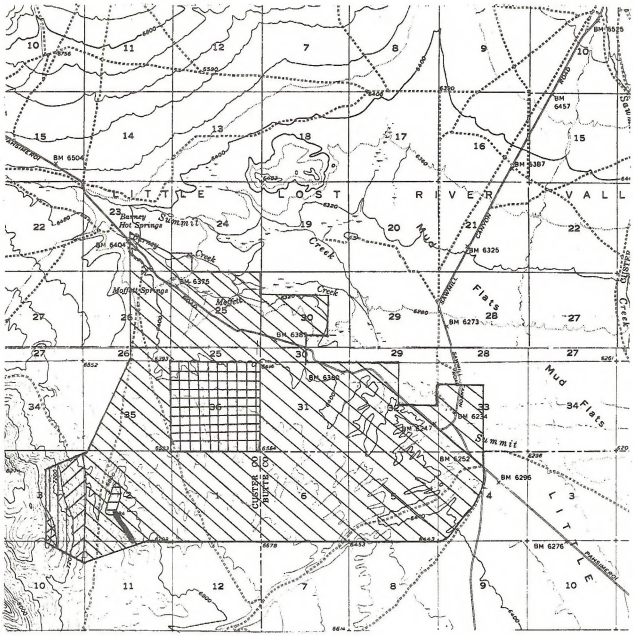
[2]Pounds available for each animal group as if they were the only ones using the forage. Only complete for those animals that are using or will use the site.

[3]Total available forage for all animals combined. The maximum lbs/acre of total Forage (2) is carried across to this column.

Attachment 1 (continued)

WARM SPRINGS ALLOTMENT
AVAILABLE FORAGE SUMMARY
TOTAL FEDERAL FORAGE

	Cattle		Sheep		Deer		Antelope		Elk		Total	
	Pounds	AUMs	Pounds	AUMs	Pounds	AUMs	Pounds	AUMs	Pounds	AUMs	Pounds	AUMs
SPRING												
Grass		977.43				18.84		97.50		13.12		997.37
Forbs		11.31				.32		18.50		.114		25.19
Shrubs		47.98				11.08		247.14		3.62		260.26
Totals	829361	1036.72			24202	30.24	290488	363.14	13479	16.8	1026243	1282.82
SUMMER												
Grass		1222.77				6.23		80.28		23.9		1256.06
Forbs		43.61				.24		45.34		.229		58.78
Shrubs		35.10				2.60		291.36		.85		295.86
Totals	1041174	1301.47			7284	9.13	333568	416.98	19995	25.0	1288558	1610.70
FALL/WINTER												
Grass		1299.50				30.32		162.97		31.08		1323.23
Forbs		26.25				.37		20.11		.50		34.15
Shrubs		85.39				25.13		360.26		6.8		394.05
Totals	1128885	1411.14			44685	55.82	434662	543.34	30295	37.9	1401125	1751.43



Warm Springs Allotment Use Areas

Suitable C ADE

Potentially Suitable A DE

Unsuitable A

Suitable C A

Unsuitable ADE

Potentially Suitable A

State Suitable C A

ATTACHMENT 2

ATTACHMENT #3

ELK[1]

	SPRING	SUMMER	F/W
GRASS & FORBS	65	78	77
SHRUBS	35	22	23

MULE DEER[1]

GRASS & FORBS	35	44	10
SHRUBS	65	56	90

ANTELOPE[1]

GRASS & FORBS	45	38	10
SHRUBS	55	62	90

SHEEP[2]

GRASS & FORBS	72	72	25
SHRUBS	28	28	75

COWS[2]

GRASS & FORBS	93	93	86
SHRUBS	7	7	14

[1]From Range Management by Stoddard, Smith, and Box 1975 Page 362

[2]From BLM Idaho State Office Information

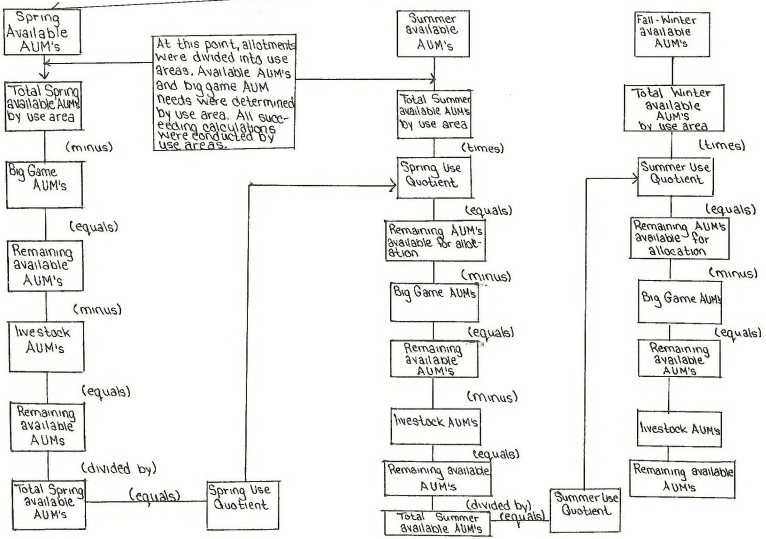
ATTACHMENT #4

ALLOTMENT	COMPETITIVE AUMs
Hawley Mountain	442
Jumpoff	49
Pass Creek	187
Spring Canyon	198
Uncle Ike	112
Warm Springs	60
Williams Creek	69
Bear Canyon	18
Bell Mountain	77
Bernice	79
Horse Creek	55
Cedarville	113
Howe Peak	153
Mahogany Butte	95
Sinks	131
Wet Creek	28
Wigwam Butte	31
Briggs Canyon	78
Burnt Canyon	66
Cedar Point	22
8 Mile Canyon	3
Sawmill Canyon	38
Summit	19
Total	2,123

Attachment 5

Initial Formula (All computations were made by allotment, by season)

Total Platable Biomass x PUF's = Pounds of Available Forage ÷ 800 pounds = Available AUM's



ATTACHMENT #6

WARM SPRINGS

		ACRES	# ANIMALS	AUMs	AUMs/ACRE
Antelope	SP.	6711	150	40	.0060
	SU.	6711	150	56	.0083
	FA.	6711	150	24	.0036
	WR.	0	0	0	0
Deer	SP.	306	7	3	.0098
	SU.	306	1	1	.0033
	FA.	306	7	2	.0065
	WR.	306	7	5	.0163
Elk	SP.	306	3	5	.0163
	SU.	306	3	7	.0229
	FA.	306	3	3	.0098
	WR.	306	12	36	.1176

AUMs BY USE AREA

		Antelope			Deer			Elk		
Suitable	Acres	Sp.	Su.	F/W	Sp.	Su.	F/W	Sp.	Su.	F/W
A	5,699	34	47	21	--	--	--	--	--	--
D,A,E,	185	1	2	--	2	1	4	3	4	24
State-A	651	4	5	2	-	-	-			
Pot. Suitable										
A	25	-	-	-	-	-	-	-	-	-
D,A,E,	15	-	-	-	-	-	-	-	-	2
Unsuitable										
A	40	-	-	-	-	-	-	-	-	-
D,A,E,	96	1	1	-	1	-	2	2	2	12

ATTACHMENT 7

WILDLIFE USE AREAS

ALLOTMENT WARM SPRINGS

SEASON SPRING

Use Area		AUMs Utilized				Available AUMs			Used AUMs	Remaining AUMs	
		Deer	Ante	Elk	Total	Use Total	Adjusted Factor	AUMs	Total	G & F *	Sh*
Suitable A	g&f*	0	15	0	15	1001	0	1001	15	986	
	sh	0	19	0	19	248	0	248	19		229
Suitable DAE	g&f	1	0	2	3	13	0	13	3	10	
	sh	1	1	1	3	7	0	7	3		4
Potentially Suitable A	g&f	0	0	0	0	1	0	1	0	1	
	sh	0	0	0	0	0	0	0	0		0
Potentially Suitable DAE	g&f	0	0	0	0	1	0	1	0	1	
	sh	0	0	0	0	1	0	0	0		1
Unsuitable A	g&f	0	0	0	0	0	0	0	0	0	
	sh	0	0	0	0	0	0	0	0		0
Unsuitable DAE	g&f	0	0	1	1	6	0	6	1	5	
	sh	1	1	1	3	4	0	4	3		1

*G = Grass
F = Forbs
Sh = Shrubs

ATTACHMENT 7 (continued)

ALLOTMENT WARM SPRINGS LICENSED CATTLE USE 257

SEASON SPRING

Use Area		Total	AUMs Cattle	AUMs Carryover	USE FACTOR Carryover / Total
Suitable	g&f	996	239	757	757/1014 = 75% Remaining
	sh	233	18	215	215/255 = 84% Remaining
Potentially Suitable	g&f	2	---	2	2/2 = 100% Remaining
	sh	1	---	1	1/1 = 100% Remaining
Unsuitable	g&f	5	---	5	5/6 = 83% Remaining
	sh	1	---	1	1/4 = 25% Remaining

ATTACHMENT 7 (continued)

ALLOTMENT WARM SPRINGS

SEASON SUMMER

Use Area		AUMs Utilized Deer	Ante	Elk	Total	Total	Available AUMs Use Factor	Adjusted AUMs	Used AUMs Total	Remaining AUMs G & F	Sh
Suitable A	g&f	0	18	0	18	1292	0.75	969	18	951	
	sh	0	29	0	29	289	0.84	243	29		214
Suitable DAE	g&f	0	1	3	4	17	0.75	13	4	9	
	sh	1	1	1	3	4	0.84	3	3		0
Potentially Suitable A	g&f	0	0	0	0	1	1.0	1	0	1	
	sh	0	0	0	0	0	1.0	0	0		0
Potentially Suitable DAE	g&f	0	0	0	0	1	1.0	1	0	1	
	sh	0	0	0	0	0	1.0	0	0		0
Unsuitable A	g&f	0	0	0	0	0	0.83	0	0	0	
	sh	0	0	0	0	1	0.25	0	0		0
Unsuitable DAE	g&f	0	0	2	2	3	0.83	2	2	0	
	sh	0	1	0	1	2	0.25	1	1		0

ATTACHMENT 7 (continued)

ALLOTMENT WARM SPRINGS LICENSED CATTLE USE 1028

SEASON SUMMER

Use Area		Total	AUMs Cattle	AUMs Carryover	USE FACTOR Carryover / Total
Suitable	g&f	960	956	4	4/1309 = 0.3% Remaining
	sh	214	72	142	142/293 = 48% Remaining
Potentially Suitable	g&f	1	---	1	1/2 = 50% Remaining
	sh	0	---	0	0
Unsuitable	g&f	0	---	0	0
	sh	0	---	0	0

ATTACHMENT 7 (continued)

ALLOTMENT WARM SPRINGS

SEASON FALL/WINTER

Use Area		AUMs Utilized Deer	Ante	Elk	Total	Total	Available AUMs Use Factor	Adjusted AUMs	Used AUMs Total	Remaining AUMs G & F	Sh
Suitable A	g&f	0	2	0	2	1323	0.003	4	2	2	
	sh	0	19	0	19	367	0.48	176	19		157
Suitable DAE	g&f	0	0	18	18	21	0.003	0	18	-18	
	sh	4	0	6	10	16	0.48	8	10		-2
Potentially Suitable A	g&f	0	0	0	0	2	0.5	1	0	1	
	sh	0	0	0	0	0	0.0	0	0		0
Potentially Suitable DAE	g&f	0	0	2	2	1	0.5	1	2	-1	
	sh	0	0	0	0	2	0.0	0	0		0
Unsuitable A	g&f	0	0	0	0	0	0.0	0	0	0	
	sh	0	0	0	0	1	0.0	0	0		0
Unsuitable DAE	g&f	0	0	9	9	10	0.0	0	9	-9	
	sh	2	0	3	5	8	0.0	0	5		-5

ATTACHMENT 7 (continued)

ALLOTMENT WARM SPRINGS

LICENSED CATTLE USE -0-

SEASON FALL/WINTER

Use Area		Total	AUMs Cattle	AUMs Carryover	USE FACTOR Carryover / Total
Suitable	g&f	-16	0	-16	-16/1344 = -1%
	sh	155	0	155	
Potentially Suitable	g&f	0	0	0	
	sh	0	0	0	
Unsuitable	g&f	-9	0	-9	
	sh	-5	0	-5	

RATIONALE FOR SELECTING GRAZING SYSTEMS

At present, most all cattle use in the LL/BC Planning Unit is not restricted to any particular pasture or area. Some operators do move their cattle from one area to another during the grazing season, but generally the cattle roam at will over the allotments. Cattle use, therefore, is concentrated in the drainage bottoms, and near water sources. This results in uneven distribution of livestock causing over use near water and little use at distance from water.

Turnout dates on most of the allotments is April 1 through May 16. This has been traditional for many years. This continuous, year after year use of the range during the early stages of plant growth is detrimental to the plants (Stoddart et. al., 1975; Hormay, 1970; Laycock, 1967; Arizona Interagency Range Committee, 1972; Heady, 1975).

The following is a list of each allotment proposed for grazing systems and reasons for proposing a particular grazing system on each:

Rest Rotation - Hawley Mountain, Jumpoff, Pass Creek, Spring Canyon, Uncle Ike, Warm Springs, and Williams Creek Allotments.

Rest rotation grazing systems were recommended on the above named allotments that exhibit some or all of the following characteristics:

1. Substantial improvement in range condition is desired and attainable through grazing management. In these allotments the majority of the range is in poor to fair condition. In addition there are large areas of poor condition range that is rated at above 32 acres/AUM.
2. At least one full year of rest is needed for seedling establishment.
3. Have the ecological potential for improvement in range condition.
4. Have developed water or the potential for developed water.
5. Are already fenced into pastures or could be fenced with a relatively small amount of new fence.

Hawley Mountain - Rest rotation was selected because 33% of this allotment is in fair and poor range condition, (23,400 acres). Poor livestock distribution due to a lack of water has resulted in over use near water and no use in areas distant from water. A relatively small amount of fencing (11.5 miles) would be needed to establish the needed pasture divisions. Adequate desirable native species exists to serve as a seed source for improving the productive capacity of the allotment. Rest rotation would provide the needed flexibility of treatments to provide for habitat requirements of a significant wildlife resource, i.e., nesting sage grouse and fawning antelope.

Jumpoff - Seventy seven percent of this allotment (10,502 acres) is in fair and poor condition. Sagebrush stands with little vegetative species diversity occupy these poorer condition ranges. Rest rotation grazing was selected here to manipulate the vegetative resource to improve vegetative diversity. Expected benefits are improved range condition, protection of the soil and watershed values and to provide for winter forage for antelope.

Pass Creek - This allotment has 8,403 acres (46%) in fair and poor condition. It is presently fenced into three pastures with fairly evenly distributed water sources. A 2.5 mile pipeline is needed but present fencing is adequate. Spring grazing needs to be delayed approximately two weeks and based on range readiness. Reduction in stocking rate along with a grazing system based on physiological needs of the plant community, will more evenly distribute grazing use and aid in improving range condition.

Spring Canyon - Sixty five percent of this allotment (23,917 acres) is in fair and poor range condition. It is expected that rest rotation grazing would accelerate improvement of range condition. Rest rotation grazing is the most effective method of dealing with a definite livestock distribution problem in this allotment. It would also increase vegetative species diversity by counteracting the negative effects of the selective grazing habits of livestock.

Uncle Ike - This allotment is presently fenced into two pastures. An additional 10.8 miles of fence would provide an additional pasture and an effective allotment boundary. Present water sources are adequate with a limited need for development. Eighty six percent (24,061 acres) of this allotment is in fair and poor range condition, primarily due to over use by horses in the past. This allotment has been managed on a modified rest rotation system for the recent past. This has resulted in a favorable trend and indicates that rest rotation would aid in improving range condition.

Warm Springs - A three pasture rest rotation grazing system was implemented on this allotment prior to the NRDC lawsuit. Lack of adequate water in each pasture has made it impossible to follow the system as designed. Thirty eight percent of the allotment (2,573 acres) is a crested wheat grass seeding in poor range condition due to poor livestock distribution. Sixty percent of the allotment is in fair or poor condition. Rest rotation provides the most versatile method for improving these management problems.

Williams Creek - This allotment is currently under a rest rotation grazing system partially implemented prior to the NRDC lawsuit. Installation of needed management facilities was completed in 1978. This entire allotment (5,363 acres) is in fair and poor range condition. A 49% reduction in stocking rate is proposed along with roto beating and interseeding of 500 acres.

Deferred Rotation - Bear Canyon, Bell Mountain, Bernice, Horse Creek, Cedarville, Sinks, Wet Creek, and Wigwam Butte Allotments.

On the above named allotments deferred rotation systems were recommended on the basis of some or all of the following criteria:

1. Allotments are primarily in good and fair condition or have a stable or upward trend.
2. Allotments which are grazed by sheep. Since sheep are herded constantly, intensity of grazing and area under use is highly selective.

Because of this flexibility, grazing systems can be implemented with a minimum of management facilities.

3. Allotments which have present pasture divisions, small size, or split season of use.

About 50% of the acreage in these allotments is in good and fair condition with stable or upward trend. Present grazing consists of seasonal use involving grazing of the same area at the same season year after year. Deferred rotation grazing would break up this repetitive use and better meet the physiological plant requirements.

Howe Peak, Mahogany Butte - These allotments are grazed by sheep. Since sheep are herded constantly, intensity of grazing and area under use is highly selective. Because of this flexibility, grazing systems can be implemented with a minimum of management facilities. Seventy eight percent of these allotments is in fair and poor condition. Trend is stable and upward, however. Plant growth needs can be met and range condition class improved by deferred rotation grazing.

Seasonal Grazing - Briggs Canyon, Burnt Canyon, Cedar Point, Eight Mile Canyon, Kyle Canyon, Sawmill, and Summit Allotments.

Seasonal grazing was recommended for these allotments based on some or all of the following criteria:

1. Maintenance of range conditions is desired.
2. Past and current livestock use has been on a seasonal basis and range is producing at a satisfactory level.
3. Are too small to be effectively managed under some type of rotation system.

Briggs Canyon, Burnt Canyon, Cedar Point, Sawmill and Summit allotments are primarily in good and fair range condition. They are proposed to be stocked within grazing capacity and seasonal grazing systems will be adequate to maintain or improve condition class. Eight Mile Canyon and Kyle Canyon are too small in acreage to be effectively managed under a rotation system. Stocking rate will be reduced to grazing capacity and management will be under seasonal grazing.

Appendix 2-1

METHODOLOGY USED TO DETERMINE VEGETATION PRODUCTION

A third order soil survey was completed in 1977 by the SCS on a contract basis. Soils were classified to the series and phase of series level. They were mapped as associations, consociations, and complexes. Concurrently the Bureau conducted an ecological site inventory following SCS "National Range Handbook" guidelines. An ecological site as used in this discussion is essentially an SCS Range Site (see Section 301-302.9 of the SCS National Range Handbook). The sites were identified as to their potential climax vegetation, not the current vegetation. Range seedings were given a separate classification and were not included in the ecological site classification.

The site conditions were identified as to poor, fair, good and excellent by comparing the current vegetation with the climax potential of the site. Maps were prepared delineating the sites and the site conditions. Representative sampling sites were selected within each condition class within each ecological site.

The sampling sites were 100 yards square. Measuring from the southwest corner 10 plots were randomly selected. The actual sampling plots were 9.6 square feet. The vegetation weight was measured in grams which converts directly to pounds per acre.

The weight of the current growth of each species was estimated in grams for all 10 sample plots. Two of the plots were then randomly selected. All current growth on these two plots were clipped and placed by species in separate sacks. The sacks were weighed and the net weight determined. The net weight was compared to the estimates for the two plots and an adjustment factor derived which was applied to the other eight plots. Example: Blue bunch wheatgrass estimated at 50 grams. The actual clipping yielded 60 grams.

$$\begin{array}{rl} 60 & \text{clipped wt.} \\ -\ 50 & \text{estimated wt.} \\ \hline 10 & \text{difference} \end{array} \qquad \frac{10}{50} = 0.2$$

The correction factor is 1 + 0.2 = 1.2. The blue bunch wheatgrass estimates would be multiplied by this factor of 1.2.

After clipping, the samples were air dryed for a minimum of three weeks and then weighed again. An air dry adjustment factor was computed as below.

$$\frac{30 \text{ dry wt.}}{60 \text{ green wt.}} = 0.5$$

The recorded green weights were then multiplied by the air dry factor. The weights of all of the plots were added and divided by 10. The final figure was the average air dry weight which converts to pounds per acre.

Appendix 2-2

ECOLOGICAL SITE DESCRIPTIONS

LITTLE LOST - BIRCH CREEK
PLANNING UNIT

The ecological site descriptions apply to specific areas where a definite soils and vegetation relationship occurs. In some instances these sites occupy a very small geographic area and two or more distinct ecological sites may be intermingled together in a complex. When this situation occurs, it is very difficult to identify each ecological site on a small scale map. The vegetation map contained in this document may not be directly related to the ecological site descriptions because two or more sites may have been combined into one vegetation type on the map. Forage allocations were based on actual vegetation clippings in each site and not on the ranges of forage production presented in each ecological site description.

The following ecological site descriptions cover the Warm Springs Allotment which was used as an example for forage allocation procedures in appendix 1-2.

Site Name: Semi-wet Meadow Carex (Agrop) Sedge (Sodwheat grass)

A. Physical Characteristics

1. Physiographic Features

This site occurs in mountain valleys, and on valley bottoms, flood plains, low lake terraces and alluvial fans near water courses. Slopes are from nearly level to gently sloping from 0-11 percent, but mostly less than 3 percent. Elevation is from 4200 to 7500 feet in most localities.

2. Climatic Features

See climatic section.

3. Potential Natural Plant Cummunity

A. The dominant visual aspect of this site is Sedge and Sod-wheat. Composition by weight is approximately 80 percent grass and grass-like plants, 15 percent forbs and 5 percent shrubs.

B. The following table is based on SCS Range Site Description Semi-wet Meadow, range site No. D28-3-1UW, and field observations.

Potential Natural Plant Community Composition and Production

Common Name	Symbol	% Composition by Weight	Range in Production lbs/acre Air Dry
Grasses and Grass-like Plants		60-95	875-1445
Wild Rye	ELYMUS	5-10	75-150
Mountain Brome	BRCAC	10-15	150-225
Sedge	CAREX	25-35	350-520
Kentucky bluegrass	POPR	0-1	0-15
Sod Wheat	AGROP	20-30	300-445
Alkalai Sacaton	SPAI	0-1	0-15
Other grasses		0-5	0-75
Forbs		0-25	0-300
Rocky Mountain Iris	IRMI	0-5	0-75
Geranium	GERAN	0-5	0-75

Site Name: Windswept 8-11 ppt. (20-28cm) - TANU/ARFR4/POSE/STCO4
Chicken sage
Fringed sage
Sandberg bluegrass
Needle-and-threadgrass

A. Physical Characteristics

1. Physiographic Features

This site occurs on alluvial and colluvial fans, terraces, and ridges. It usually occurs on the windswept portion of the landscape or where gravels exceed 60% by volume less than 10 inches deep in the soil profile. It occurs on all aspects and elevation ranges from 5400 to 7000 feet (1650-2150m).

2. Climatic Features

See climate section.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is barren, open ground with very sparse, low-growing vegetation. The plant community is varied. The composition by weight averages approximately 30-40% grass, 25-35% forbs, and 25-40% shrubs.

b. Plant species, percent composition by weight, and approximate production for each species are:

Potential Natural Plant Community Composition and Production

Common Name	Symbol	% Composition by Weight	Range in Production lbs/ac Air Dry	Range in Production kg/ha Air Dry
Grasses		30-40	25-100	28-112
Sandberg bluegrass	POSE	15-20	15-50	17-57
Swallen ricegrass (rare)	ORSW	5-10	5-25	6-28
needle-and-threadgrass	STCO4	10-15	10-50	11-57
bottlebrush squirreltail	SIHY	5-10	5-25	6-28

Site Name: Windswept 8-11 ppt. (cont)

Common Name	Symbol	% Composition by Weight	Range in Production lbs/ac Air Dry	Range in Production kg/ha Air Dry
Grasses (cont)				
Indian ricegrass	ORHY	1-5	5-15	6-17
bluebunch wheatgrass	AGSP	T-1	T-5	T-6
Carex spp.	Carex	0-3	0-10	0-11
Forbs		25-35	20-90	22-100
eriogonum spp.	ERIOG	5-10	5-25	6-28
crag aster	ASSC	T-5	T-10	T-11
Hoods Phlox	PHHO	5-20	10-50	11-67
Pursh loco milkvetch	ASPU9	1-2	1-5	1-6
Kings sandwort	ARKI	1-2	1-5	1-6
Rydberg penstemon	PERY	2-5	5-15	6-17
wild onion	ALLUI	T-1	T-5	T-6
other perennnial forbs	PPFF	1-3	1-10	1-11
Shrubs		25-40	20-100	22-112
chicken sage	TANU	10-20	10-50	11-57
shadscale saltbush	ATCO	5-10	5-25	6-28
black sagebrush	ARARN	T-2	T-10	T-11
bud sage	ARSP5	1-5	5-15	6-17
winterfat	EULA5	1-5	5-15	6-17
fringed sage	ARFR4	10-20	10-50	11-57
Wyoming big sagebrush (stunted)	ARTRW	1-5	5-15	6-17
stemless goldenweed	HAAC	1-5	5-15	6-17

Total Annual Production

Favorable years	300 lbs/ac air dry (336 kg/ha)
Median years	150 lbs/ac air dry (168 kg/ha)
Unfavorable years	75 lbs/ac air dry (84 kg/ha)

c. Vegetation cover is estimated to be 5-10%.

d. Variation

Vegetation composition varies widely on this site, In some areas, fringed sage dominates the shrubs and in other areas chicken sage dominates, with all other combinations in between. Care must be taken when determining ecological con-

Site Name: Windswept 8-11 ppt. (cont)

dition to allow for htese variations.

There are circular islands of Carex scattered through this site in the Challis area. It is likely that they occurred similarly as patches in the original native climax condition.

4. Soils

a. The soils of this site are gravelly to extremely gravelly loams. Gravels 60% by volume or greater often occur less than 10 inches deep in the soil profile on the smooth terrace and alluvial fan positions. On the brow of ridges (windswept position), gravels can be deeper. The windswept position results in the same low moisture effect as the shallow gravels.

The limiting factors for this site are the extremely low moisture availability and the high wind stress.

b. Typical soils series are:

Little Lost-Birch Creek

Windfall - windswept phase
Lein - windswept phase

ECOLOGICAL SITE DESCRIPTION

Site Name: Gravelly loam 11-13" ppt. (28-33cm) - ARTRW/AGSP
Wyoming big sagebrush
bluebunch wheatgrass

A. Physical Characteristics

1. Physiographic Features

This site occurs on alluvial fans, terraces, and steep mountain slopes. It occurs on all aspects and elevations ranging from 5500 to 7500 feet (1692-2300 m). Slopes range from 5-60%. At the higher elevations, it occurs mainly on southerly exposures.

2. Climatic Features

See Climate section.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is Wyoming big sagebrush and bluebunch wheatgrass. The composition is approximately 50-70% grass, 5-10% forbs, and 15-25% shrubs by weight.

b. Plant species, percent composition by weight, and approximate product for each species in the potential plant community are:

Potential Natural Plant Community Composition and Production

Common Name	Symbol	% Composition by Weight	Range in Production lbs/ac Air Dry	Range in Production kg/ha Air Dry
Grasses		50-70	200-500	224-560
bluebunch wheatgrass	AGSP	50-60	175-500	224-560
Sandberg bluegrass	POSE	1-5	10-30	11-34
Indian ricegrass	ORHY	T-5	T-30	T-34
Nevada bluegrass	PONE	0-2	0-15	0-17
sod wheatgrass	AGSM2 AGDA	0-10	0-75	0-84
bottlebrush squirreltail	SIHY	1-3	5-25	6-28
needle-and-threadgrass	STCO4	0-3	0-25	0-28
prairie junegrass	KOCR	T-2	5-15	T-17
sand dropseed	SPCR	0-2	0-15	0-17
Letterman's needlegrass	STLE4	0-1	0-10	0-11
Thurbers needlegrass	STTH2	0-5	0-30	0-34

Site Name: Gravelly loam 11-13" ppt. (cont)

Common Name	Symbol	% Composition by Weight	Range in Production lbs/ac Air Dry	Range in Production kg/ha Air Dry
Forbs		5-10	15-80	17-90
Hoods phlox	PHHO	2-5	5-30	6-34
threadleaf pholx	PHMU	0-3	0-25	0-17
Indian paintbrush	CASTI	0-2	0-15	0-17
globemallow	SPHAE	0-2	0-15	T-17
eriogonum	ERIOG	T-2	T-15	T-17
cushion eriogonum	EROV	T-1	T-10	T-11
daisy	ERIGE	T-1	T-10	T-11
astragalus	ASTRA	1-2	5-15	6-17
wall flower	ERYSI	T-1	T-10	T-11
tapertip hawksbeard	CRAC2	0-1	0-10	0-11
Shrubs		15-25	75-200	84-224
Wyoming big sagebrush	ARTRW	10-20	50-150	57-168
green rabbitbrush	CHVI8	T-2	T-15	T-17
rubber rabbitbrush	CHNA	T-1	T-10	T-11
shrubby eriogonum	ERIOG	T-1	T-10	T-11
plains prickly pear	OPPO	T-1	T-10	T-11
dwarf goldenweed	HANA	1-2	5-15	6-17
prickly gilia	LEPU	1-2	5-15	6-17
pin cushion cactus	COMI (RNSAS)	T-1	T-10	T-11

Total Annual Production

Favorable years	800 lbs/ac air dry (893 kg/ha)
Median years	450 lbs/ac air dry (502 kg/ha)
Unfavorable years	300 lbs/ac air dry (336 kg/ha)

c. Total foliar cover is estimated to be 25-35%.

4. Soils

a. The soils of this site are typically very deep and well drained. Permeability is moderate. Available water-holding capacity is medium. The surface is a loam to gravelly loam. Gravels and other coarse fragments often exceed 60% by volume below 12-15 inches in depth. The depth to gravels greater than 60% by volume can be less than 12 inches in depressions or where available moisture otherwise compensates for the heavy gravels.

Site Name: Gravelly loam 11-13" ppt.(cont)

b. Typical soil series are:

Little Lost-Birch Creek

Bluedome loam
Combe gravelly loam
Firebox stony phase

Site Name: Gravelly 11-13" ppt. (28-33cm) - ARAR8/AGSP
Low sagebrush
bluebunch wheatgrass

A. Physical Characteristics

1. Physiographic Features

This site occurs on alluvial and colluvial fans, terraces, and gently foothills, usually less than 35% slope. It occurs on all aspects and elevation ranges from 6200 to 7500 feet. (1900-2300 cm).

2. Climatic Features

See climate section.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is bluebunch wheatgrass standing above low sagebrush. The composition is approximately 45-60% grass, 3-5% forbs, and 30-45% shrubs by weight.

b. Plant species, percent comopsition by weight, and approximate production for each species are:

Potential Natural Plant Community Composition and Production

Common Name	Symbol	% Composition by Weight	Range in Production lbs/ac Air Dry	kg/ha Air Dry
Grasses		45-60	150-325	168-364
bluebunch wheatgrass	AGSP	40-55		
Sandberg bluegrass	POSE	1-3	10-30	11-22
prairie junegrass	KOCR	1-5	10-35	11-39
Nevada bluegrass	PONE	1-3	10-20	11-22
bottlebrush squirreltail	SIHY	T-2	T-15	T-17
Indian ricegrass	ORHY	0-2	0-15	0-17
sod wheatgrass	AGROP	0-2	0-15	0-17

Site Name: Gravelly 11-13" ppt. (cont)

Common Name	Symbol	% Composition by Weight	Range in Production lbs/ac Air Dry	kg/ha Air Dry
Forbs		3-5	15-30	17-34
Hoods phlox	PHHO	1-5	10-35	11-39
astragalus	ASTRA	T-1	T-10	T-11
eriogínum	ERIOG	T-1	T-10	T-11
Indian paintbrush	CASTI5	T-1	T-10	T-11
erigeron	ERIGE	T-1	T-10	T-11
pursh loco milkvetch	ASPU9	T-1	T-10	T-11
Shrubs		30-45	120-250	135-280
low sagebrush	ARAR8	25-40	100-225	112-251
winterfat	EULA5	T-3	T-25	T-28
green rabbitbrush	CHVI8	T-2	T-15	T-17
fringed sagebrush	ARFR4	0-2	0-15	0-17
dwarf goldenweed	HANA	1-3	10-25	11-28

Total Annual Production

Favorable years	750 lbs/ac (841 kg/ha)
Median years	400 lbs/ac (449 kg/ha)
Unfavorable years	300 lbs/ac (336 kg/ha)

c. Cover

Total foliar cover is approxilately 15-20%.

d. Variation

There are broad transition zones where this site meets the black sagebrush/bluebunch wheatgrass site. In these transition zones vegetation consists of a mixture of that which is typical of both sites. Where this site occurs on shallow ridges or soils where heavy gravels are close to the surface (<10" in depth) low sagebrush becomes more dominant and bluebunch wheatgrass less prevalent. Production potential is less than typical for the site (200-400 lbs/ac; 224-449 kg/ha).

This site occurs on deep loamy soils in the Hansen Pass and Pass Creek areas near Howe, Idaho. Microenvironmental factors cause this plant community to occur on these deeper

Site Name: Gravelly loam 13-16" ppt. (33-40cm) - ARTRV/AGSP
Mountain big sagebrush
bluebunch wheatgrass

A. Physical Characteristics

1. Physiographic Features

This site occurs on alluvial and colluvial foothill areas and steep mountain slopes. Slopes range from 10-50%. It occurs on all aspects and elevation ranges from 6000 to 8000 feet (1840-2450m). At the lower elevations, it occurs on the north and east slopes or in depressions, and at the higher elevations it can occur on south and west slopes.

2. Climatic Features

See climate section.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is mountain big sagebrush and bluebunch wheatgrass. The composition is approximately 55-60% grass, 5-15% forbs, and 20-30% shrubs by weight.

b. Plant species, percent composition by weight, and approximate production for each species are:

Potential Natural Plant Community Composition and Production

Common Name	Symbol	% Composition by Weight	Range in Production lbs/ac Air Dry	Range in Production kg/ha Air Dry
Grasses		55-60	250-600	280-673
bluebunch wheatgrass	AGSP	40-50	150-450	168-502
Idaho fescue	FEID	5-15	35-100	39-112
Nevada bluegrass	PONE	1-3	5-25	6-28
Sandberg bluegrass	POSE	2-5	10-50	11-57
bottlebrush squirreltail	SIHY	T-1	T-10	T-11
prairie junegrass	KOCR	2-5	10-50	11-57
needle-and-threadgrass	STCO4	T-1	T-10	T-11
sod wheatgrass	AGROP	0-2	0-10	0-11

Site Name: Gravelly 11-13" ppt. (cont)

soils rather than the usual Wyoming big sagebrush community.

4. Soils

a. The soils of this site are loams to extremely gravelly loams. Occasionally they are moderately alkaline. They can be shallow to a hardpan or deep. Gravels often exceed 60% by volume in the soil profile below 12 inches in depth. Parent material consists of colluvium and alluvium from sedimentary and metamorphic rocks, heavily influenced by limestone. These soils are extremely cold.

b. Typical Soil series are:

Sparmo (dry phase)
Zeale gravelly loam
Windfall
Nicholia gravelly loam
Fallert (moist phase)
Combe (moist phase)
Nurkey stony loam

Site Name: Gravelly loam 13-16" ppt. (cont)

Common Name	Symbol	% Composition by Weight	Range in Production lbs/ac Air Dry	Range in Production kg/ha Air Dry
Forbs		5-15	35-100	39-112
arrowleaf balsamroot	BASA3	3-10	25-75	28-84
locoweed milkvetch	ASTRA	1-2	5-20	6-22
death camas	ZYGAD	T-1	T-10	T-11
musk phlox	PHMU	1-2	5-20	6-22
rose pussytoes	ANRO2	1-2	5-20	6-22
Indian paintbrush	CASTI	1-2	5-20	6-22
tailcup lupine	LUCA	T-2	T-20	T-22
sego lily	CANU	T-1	T-10	T-11
Hoods phlox	PHHO	1-5	10-50	11-57
longleaf phlox	PHLO	0-2	0-10	0-11
other perennial forbs	PPFF	1-2	5-10	6-11
eriogonum	ERIOG	T-1	T-10	T-11
Shrubs		20-30	150-350	168-392
mountain big sagebrush	ARTRV	15-25	150-300	168-336
grey horsebrush	TECA	1-2	5-10	6-11
prickly gilia	LEPU	1-2	5-10	6-11
shrubby eriogonum	ERIOG	1-2	5-10	6-11
tall green rabbitbrush	CHVI8	1-2	5-10	6-11
rubber rabbitbrush	CHNA2	T-1	T-10	T-11
twistedleaf rabbitbrush	CHVIP	T-1	T-10	T-11
plains prickly pear	OPPO	T-1	T-10	T-11
threetip sagebrush	ARTR4	T-3	T-25	T-28
*antelope bitterbrush	PUTR2	T-5	T-50	T-47

Total Annual Production

Favorable years	1000 lbs/ac air dry (1121 kg/ha)
Median years	600 lbs/ac air dry (673 kg/ha)
Unfavorable years	350 lbs/ac air dry (392 kg/ha)

*Bitterbrush can become equally dominant with mountain big sagebrush in some areas.

Site Name: Gravelly 13-16" ppt. (33- 40 cm) - ARTR4/FEID
Threetip sagebrush/
Idaho fescue

A. Physical Characteristics

1. Physiographic Features

This site occurs on alluvial and colluvial foothills, mountain slopes, and hillsides. Slopes are usually less than 30%, but do reach 60% on north aspects. It occurs on all aspects and elevation ranges from 6000 to 9000 (1840-2750 m).

2. Climatic Features

a. Annual precipitation of this site ranges from 13-16 inches (33-40 cm). Approximately 40-50% comes in the winter dormant period (October to March) and 50-60% during the plant growing season (April-September). May and June usually receive 25-30% of the annual precipitation.

b. Plant growth begins from April 15-May 1, and grasses and forbs are usually matured by August 1-15. Grass regrowth may occur if fall rains are sufficient. Shrubs continue to grow during the summer dormant period but at a reduced rate. The optimum plant growth period is from May 15 to July 10. The average frost-free period is 50-80 days.

3. Potential Natural Plant Community

a. The dominant visual aspect of this site is threetip sagebrush and Idaho fescue. The composition is approximately 55-65% grass, 1-5% forbs, and 20-30% shrubs by weight.

b. Plant species, percent composition by weight, and approximate production for each species are:

c. Vegetation cover is estimated to be 30-40%.

d. Variation

In more gravelly sites or where heavy gravels are closer to the surface, the threetip sagebrush/bluebunch wheatgrass site becomes more dominant. In more gravelly sites at the lower precipitation range, the Wyoming big sagebrush/bluebunch wheatgrass site becomes more dominant. Transition zones exist between these two sites and this site. Plant species typical of all sites will be found in the transition zones. This must be considered when determining ecological condition.

4. Soils

a. The soils of this site are loams to extremely gravelly loams. Soils are deep to moderately deep and well drained. Frost-free period is about 50-80 days. Permeability is moderate. Gravels, cobbles, and/or stones often exceed 50% by volume in the soil profile.

b. Typical Soil Series are:

Little Lost-Birch Creek

Surret loam

POTENTIAL NATURAL PLANT COMMUNITY COMPOSITION AND PRODUCTION

Common Name	Symbol	% Composition by Weight	Range in Production lbs/ac Air Dry	Range in Production kg/ha Air Dry
Grasses		55-65	200-500	224-560
Idaho fescue	FEID	40-50	150-400	168-449
bluebunch wheatgrass	AGSP	5-10	30-100	34-112
Nevada bluegrass	PONE	1-3	10-30	11-34
Sandberg bluegrass	POSE	2-5	10-40	11-45
bottlebrush squirreltail	SIHY	T-1	T-10	T-11
prairie junegrass	KOCR	1-3	10-30	11-34
needle-and-threadgrass	STCO4	T-1	T-10	T-11
Forbs		5-15	50-125	57-140
Hoods phlox	PHHO	1-5	10-50	11-57
astragalus	ASTRA	1-2	10-20	11-22
death camas	ZYPA	T-1	T-10	T-11
musk phlox	PHMU	T-2	T-20	T-22
cushion eriogonum	EROV	T-1	T-10	T-11
eriogonum spp.	ERIOG	T-1	T-10	T-11
Indian paintbrush	CASTI	1-2	10-20	11-22
tailcup lupine	LULA	T-1	T-10	T-11
sego lily	CANU	T-1	T-10	T-11
rose pussytoes	ANRO	1-3	10-30	11-34
tapertip hawksbeard	CRAC2	T-3	T-30	T-34
other perennial forbs	PPFF	1-3	10-30	11-34
Shrubs		20-30	100-250	112-280
threetip sagebrush	ARTR4	15-25	75-200	84-224
grey horsebrush	TECA	1-2	10-20	11-22
shrubby eriogonum	ERIOG	1-2	10-20	11-22
tall green rabbitbrush	CHVI8	1-2	10-20	11-22
rubber rabbitbrush	CHNA	T-1	T-10	T-11
broadleaf rabbitbrush	CHVIP	T-1	T-10	T-11
prickly gilia	LEPU	T-1	T-10	T-11

Total Potential Annual Production:

Favorable Years	900 lbs/ac air dry (1009 kg/ha)
Median Years	500 lbs/ac air dry (560 kg/ha)
Unfavorable Years	300 lbs/ac air dry (336 kg/ha)

d. Vegetation cover is 20-30% by occular estimate.

e. Variations

In the transition area between this site and the threetip sagebrush/bluebunch wheatgrass, the fescue and wheatgrass may attain equal status. However, each species dominates on its own site.

While this site is in the same precipitation bracket as the threetip sagebrush/bluebunch wheatgrass site, it is higher, cooler, and towards the upper half of the precipitation bracket.

4. Soils

a. The soils of this site are loamy to extremely gravelly loams. They are deep and well drained. Root concentration is between 10 and 20 inches. The parent material is alluvium and colluvium from sedimentary and metamorphic rock. Gravels often exceed 60% by volume in the soil profile below a depth of 10-12".

b. Typical Soil Series Are:

Klug (FEID)
Zeebar (FEID)
Hoskin moist phase (FEID)
Vaysa (FEID)

5. Location of Typical Examples of Site:

a. Typical Example:

b. Counties occurring in:

Idaho: Custer
Butte

Appendix 2-3

SUMMARY OF RANGE SUITABILITY CRITERIA
USED IN DEVELOPING PROPOSED ACTION

The following criteria was used for determining suitable livestock grazing.

Suitable:

1. Areas with slopes 0-20 percent where the distance from water is less than two miles.

2. Areas with slopes between 21-30 percent where the distance from water is 0.6 miles or less.

3. Areas with slopes between 31-40 percent where the distance from reliable water is 0.4 miles or less.

4. Areas with slopes between 41-50 percent where the distance from reliable water is 0.3 miles or less.

Potentially suitable:

5. Areas with slopes between 0-50 percent where water can be developed or hauled to within the distance criteria in 1 through 4.

6. Areas with less production than 32A/AUM.

Unsuitable:

7. Areas that do not meet distance from water criteria of 1 and 5.

8. Slopes steeper than 50%.

9. Soil Surface Factor guidelines (erosion) set forth in Washington Office Instruction Memo 78-134. None of the ES area was classified unsuitable due to Soil Surface Factor limitations.

Appendix 2-4

ECOLOGICAL SITE CONDITION METHODOLOGY

A third order soil survey was completed in 1977 by the SCS on a contract basis with the BLM. An ecological site including species composition and bio-mass production inventory was conducted in conjunction with the soil survey using SCS National Range Handbook guidelines and BLM directives and manual procedures.

The natural plant communities were identified and correlated with the soil survey. The production and species composition of the potential natural plant communities (excellent condition) was determined by comparing them to relic areas and SCS range site descriptions.

The ecological condition was determined in accordance with the SCS National Range Handbook criteria comparing the present plant communities and site conditions with that of potential (excellent) site conditions. Sufficient additional condition write-ups were made to deleniate the ecological condition areas.

Appendix 2-5

ECOLOGICAL SITE TREND METHODOLOGY

A third order soil survey was completed in 1977 by the SCS on a contract basis with the BLM. An ecological site inventory including species composition and bio-mass production was conducted in conjunction with the soil survey using SCS National Handbook guidelines and BLM directives and manual procedures.

Trend writeups using BLM forms and procedures was made at each ecological site sampling area and a cross section through each allotment sufficient to deleniate trend demarcation lines.

Appendix 2-6

Soil Series Acreage and Biomass Production by Soil Survey Mapping Unit

Map Unit	Map Unit Classification by Soil Series, Sub-Group, or Great Group	Acres	Percent of Map Unit	Percent of EIS Area	Total Biomass Production In Pounds Per Acre For Soil Mapping Units In Excellent Ecological Condition Unfavorable Year	Favorable Year	Total Average Median Years Production
2A,D	Allhands loam	10,746	40				
	Fallert gravelly loam	8,059	30				
	Lien loam	4,030	15				
	Siri gravelly loam	2,686	10				
	Pseudo Allhands loam	1,343	5				
	Total	26,864	100	6.74	287	690	13,123,064
3D,E	Allhands loam	12,123	60				
	Lien loam	4,041	20				
	Fallert gravelly loam	2,021	10				
	Siri gravelly loam	2,021	10				
	Total	20,206	100	5.07	287	690	9,870,631
11DG	Windfall gravelly loam	2,837	60				
	Surrett gravelly loam	1,182	25				
	Bluedome loam	709	15				
	Total	4,728	100	1.19	171	547	1,697,352
13D,E,F,G	Borollic Camborthid (Cryic)	13,768	95				
	Zeale gravelly loam	725	5				
	Total	14,493	100	3.64	350	762	8,058,108
15D	Lien loam	7,586	60				
	Allhands loam	3,160	25				
	Fallert gravelly loam	1,264	10				
	Siri gravelly loam	632	5				
	Total	12,642	100	3.17	141	695	5,284,356

Soil Series Acreage and Biomass Production by Soil Survey Mapping Unit

Map Unit	Map Unit Classification by Soil Series, Sub-Group, or Great Group	Acres	Percent of Map Unit	Percent of EIS Area	Total Biomass Production In Pounds Per Acre For Soil Mapping Units In Excellent Ecological Condition Unfavorable Year	Favorable Year	Total Average Median Years Production
17A,D	Lien gravelly loam	4,911	60				
	Allhands loam	2,046	25				
	Fallert gravelly loam	818	10				
	Siri gravelly loam	409	5				
	Total	8,184	100	2.06	182	425	2,483,844
25DF	Challis extremely bouldery loam	3,406	90				
	Usine gravelly loam	378	10				
	Total	3,784	100	0.95	237	645	2,009,304
29A,D	Combe loam	7,892	50				
	Nicholia gravelly loam	4,734	30				
	Surrett gravelly loam	3,156	20				
	Total	15,783	100	3.96	310	825	8,956,852
30A,D,E,G,	Combe loam	4,439	75				
	Nicholia gravelly loam	592	10				
	Windfall gravelly loam	592	10				
	Bluedome loam	296	5				
	Total	5,919	100	1.49	281	755	3,066,042
31AD	Typic Cryaquolls	2,440	70				
	Zeale-gravelly loam	348	10				
	Firebox-gravelly loam	174	5				
	Pachie Cryoborolls	523	15				
	Total	3,485	100	0.87	545	1,485	3,537,275

Soil Series Acreage and Biomass Production by Soil Survey Mapping Unit

Map Unit	Map Unit Classification by Soil Series, Sub-Group, or Great Group	Acres	Percent of Map Unit	Percent of EIS Area	Total Biomass Production In Pounds Per Acre For Soil Mapping Units In Excellent Ecological Condition Unfavorable Year	Favorable Year	Total Average Median Years Production
32F,G	Cryoborolls	14,932	50				
	Rock outcrop	8,958	30				
	Zeale-gravelly loam	2,986	10				
	Cryorthents	1,493	5				
	Nurkey extremely stoney loam	1,493	5				
	Total	29,862	100	7.50	190	475	9,929,155
35A,D	Firebox gravelly loam	7,917	80				
	Zeale gravelly loam	1,979	20				
	Total	9,896	100	2.48	300	870	4,453,200
36D,EG	Firebox gravelly loam	1,262	80				
	Zeale gravelly loam	316	20				
	Total	1,578	100	0.4	300	785	856,065
37D	Firebox gravelly loam	202	80				
	Zeale gravelly loam	50	20				
	Total	252	100	0.08	300	710	127,260
45DG	McCaleb loam	6,509	60				
	Rock outcrop	2,712	25				
	Torriorthents	1,086	10				
	Sparmo loam	542	5				
	Total	10,848	100	2.72	175	433	3,297,792
46A,D,E	McCaleb loam	8,992	80				
	Usine gravelly loam	562	5				
	Siri gravelly loam	337	3				
	Fallert gravelly loam	224	2				
	Sparmo loam	1,124	10				
	Total	11,240	100	2.82	200	610	4,552,200

Soil Series Acreage and Biomass Production by Soil Survey Mapping Unit

Map Unit	Map Unit Classification by Soil Series, Sub-Group, or Great Group	Acres	Percent of Map Unit	Percent of EIS Area	Total Biomass Production In Pounds Per Acre For Soil Mapping Units in Excellent Ecological Condition Unfavorable Year	Favorable Year	Total Average Median Years Production
47D	McCaleb loam	258	60				
	Usine gravelly loam	130	30				
	Sparmo loam	22	5				
	Siri gravelly loam	22	5				
	Total	432	100	0.11	231	625	184,896
51A,D	Nicholia gravelly loam	9,200	50				
	Bluedome loam	5,519	30				
	Windfall gravelly loam	1,840	10				
	Combe loam	1,840	10				
	Total	18,399	100	4.62	278	725	9,227,098
52D	Nicholia gravelly loam	2,862	60				
	Windfall gravelly loam	1,432	30				
	Bluedome loam	239	5				
	Surrett gravelly loam	239	5				
	Total	4,772	100	1.20	235	630	2,290,560
56A	Pachic Cryoborolls	1,014	80				
	Firebox gravelly loam	63	5				
	Typic Cryoborolls	190	15				
	Total	1,267	100	0.32	347	995	850,157
57AD	Pancheri silt loam	10,162	50				
	Sparmo loam	7,114	35				
	Rock Outcrop	3,049	15				
	Total	20,325	100	5.10	171	530	7,123,912

Soil Series Acreage and Biomass Production by Soil Survey Mapping Unit

Map Unit	Map Unit Classification by Soil Series, Sub-Group, or Great Group	Acres	Percent of Map Unit	Percent of EIS Area	Total Biomass Production In Pounds Per Acres For Soil Mapping Units In Excellent Ecological Condition Unfavorable Year	Favorable Year	Total Average Median Years Production
64A,D	Siri gravelly loam	4,076	85				
	Whiteknob gravelly loam	240	5				
	Sparmo loam	240	5				
	Fallert gravelly loam	240	5				
	Total	4,796	100	1.20	181	605	1,884,828
65A,D,EF	Siri gravelly loam	27,993	60				
	Fallert gravelly loam	11,664	25				
	Sparmo loam	4,665	10				
	Allhands loam	2,333	5				
	Total	46,655	100	11.72	212	630	19,641,755
70AF	Siri gravelly loam	5,553	50				
	Sparmo loam	2,776	25				
	Lien loam	1,666	15				
	Fallert gravelly loam	1,110	10				
	Total	11,105	100	2.79	175	540	3,970,038
71A,D	Sparmo loam	9,204	80				
	Siri gravelly loam	575	5				
	McCaleb loam	1,150	10				
	Whiteknob gravelly loam	575	5				
	Total	11,504	100	2.89	177	600	4,469,304
72D	Sparmo loam	558	80				
	Siri gravelly loam	35	5				
	McCaleb loam	70	10				
	Whiteknob gravelly loam	35	5				
	Total	698	100	0.18	177	600	271,173
73E	Surrett stoney loam	1,078	75				
	Siri gravelly loam	216	15				
	Allhands loam	144	10				
	Total	1,438	100	0.36	300	700	719,000

Soil Series Acreage and Biomass Production by Soil Survey Mapping Unit

Map Unit	Map Unit Classification by Soil Series, Sub-Group, or Great Group	Acres	Percent of Map Unit	Percent of EIS Area	Total Biomass Production In Pounds Per Acre For Soil Mapping Units In Excellent Ecological Condition Unfavorable Year	Favorable Year	Total Average Median Years Production
75EF,G	Torriorthents	23,496	60				
	Rock Outcrop	13,685	35				
	McCaleb loam	1,979	5				
	Total	39,160	100	9.83	201	500	13,725,580
77A	Xeric Torrifluvents	10,241	70				
	Sparmo loam	1,463	10				
	McCaleb loam	732	5				
	Pancheri silt loam	2,194	15				
	Total	14,630	100	3.67	332	870	8,792,630
80A,D,E	Usine gravelly loam	5,373	60				
	Challis gravelly loam	2,239	25				
	McCaleb loam	1,343	15				
	Total	8,955	100	2.25	256	630	3,967,065
83A	Usine gravelly loam	5,328	55				
	Whiteknob gravelly loam	2,905	30				
	McCaleb loam	968	10				
	Allhands loam	484	5				
	Total	9,685	100	2.43	244	628	4,222,660
84D	Whiteknob gravelly loam	4,224	70				
	Siri gravelly loam	1,508	25				
	Allhands loam	302	5				
	Total	6,034	100	1.52	181	605	2,371,362
90D,E,F	Zeale gravelly loam	8,571	75				
	Surrett loam	1,714	15				
	Nurkey extremely stoney loam	571	5				
	Psudeo Zeale gravelly loam	571	5				
	Total	11,427	100	2.87	307	788	6,256,282

Soil Series Acreage and Biomass Production by Soil Survey Mapping Unit

Map Unit	Map Unit Classification by Soil Series, Sub-Group, or Great Group	Acres	Percent of Map Unit	Percent of EIS Area	Total Biomass Production In Pounds Per Acre For Soil Mapping Units In Excellent Ecological Condition Unfavorable Year	Favorable Year	Total Average Median Years Production
95D,E,FG	Nurkey extremely stoney loam	3,038	80				
	Zeale loam	190	5				
	Surrett loam	190	5				
	Borollic Camborthids	190	5				
	Borollic Haplogrids	190	5				
	Total	3,798	100	0.95	303	762	2,022,435
98E,G	Typic Cryorthents	2,719	80				
	Cryoborolls	340	10				
	Camborthids	340	10				
	Total	3,399	100	0.85	303	762	1,809,968
ES Total		398,243		100.00			175,103,163

APPENDIX 2-7

GENERAL SOIL PROPERTIES

Series	Slope Percent	Erosion Susceptibility1 Water	Erosion Susceptibility1 Wind Group	Erosion Factors 2 K	Erosion Factors 2 Allowable Soil Loss in T/A/YR.	Hydrologic3 Group	Permability (in/hr) 4	Available Water Holding Capacity5 (in/in)	Shrink - Swell Capacity6	Soil7 ph
Allhands	0-20	Moderate	8	0.37	1.0	B	0.6-2.0	0.13-0.19	Low	7.4-9.0
Bluedome	0-15	Slight	8	0.32	2.0	B	0.6-2.0	0.16-0.18	Low	7.9-9.0
Challis	0-20	High	8	0.32	2.0	B	0.6-2.0	0.13-0.14	Low	7.9-8.4
Combe	0-60	Slight	8	0.37	2.0	B	0.6-2.0	0.12-0.13	Low	7.4-8.4
Fallert	0-20	Slight	8	0.32	2.0	B	0.6-2.0	0.13-0.14	Low	7.9-8.4
Firebox	0-50	Slight	8	0.32	2.0	B	0.6-2.0	0.13-0.14	Low	6.1-6.5
Lien	2-40	Moderate	4L	0.32	1.0	D	2.0-6.0	0.06-0.09	Low	7.7-8.4
McCaleb	0-45	Slight	5	0.37	4.0	B	0.6-2.0	0.14-0.16	Low	7.9-8.4
Pancheri	0-20	Slight	5	0.49	5.0	B	0.6-2.0	0.19-0.21	Low	7.4-8.4
Nicholia	0-20	Slight	8	0.32	1.0	B	0.6-2.0	0.12-0.13	Low	7.4-8.4
Nurkey	4-45	Moderate	8	0.24	5.0	B	0.6-2.0	0.13-0.17	Low	7.4-8.4
Sparmo	0-12	Slight	8	0.37	5.0	B	0.6-2.0	0.13-0.19	Low	7.4-8.4
Siri	30-50	Slight	8	0.24	5.0	B	0.6-2.0	0.06-0.08	Low	7.9-9.0
Surrett	0-20	Moderate	8	0.32	2.0	B	0.6-2.0	0.12-0.14	Low	7.4-7.8
Usine	2-30	Slight	4L	0.28	5.0	B	2.6-6.0	0.09-0.12	Low	7.9-9.0
Whiteknob	0-12	Slight	4L	0.24	1.0	B	0.6-2.0	0.12-0.15	Low	7.4-7.8
Windfall	4-20	Moderate	8	0.32	1.0	B	0.6-2.0	0.12-0.17	Low	7.9-8.4
Zeale	4-30	Moderate	8	0.37	2.0	B	0.6-2.0	0.13-0.19	Low	7.9-8.4

1. Erosion Susceptibility - The potential of a soil for erosion with no surface cover or sub-soil roots.

   a. Water - Ranking from low to high with high having the most serious erosion susceptibility.
   b. Wind - Ranking from one to eight with one as the most susceptable and eight the most stable or resistive to wind erosion.

2. Erosion Factors

   a. "K" factor is the soil-erodability factor in the Universal Soil Loss Equation. Rating from 0.0 to 1.0; the higher the number the more erodable the soil.
   b. "T" factor is the loss of soil in tons per acre per year that a soil can sustain without a significant loss of production.

3. Hydrologic soil groups - Ranking of soils from A to D referring to run-off potential with D the highest potential.

4. Permability - Is the water intake of the soil in inches of water per hour.

5. Available water holding capacity - Is the amount of water available for plant use that can be stored in each inch of soil.

6. Shrink-swell capacity - The rating of the soil reaction of swelling when wet and shrinking when dry (low, moderate, high). The low rating indicates the least shrink and swell. The amount of shrink-swell is correlated to the size and percent of soil fines. The larger the percent and the smaller the soil particles, the greater the shrink-swell capacity.

7. Soil pH - Is the rating of the soil chemistry i.e. acidity-alkalinity. A pH of 7.0 is neutral, less than 7.0 is acid, more than 7.0 is alkaline.

Appendix 2-8

SEDIMENT YIELD FACTOR RATING

In the Pacific Southwest Interagency Committee (PSIAC) method of estimating sediment yields, nine factors are considered in determing the sediment yield rating (see attached form). The sediment yield characteristic of each factor is assigned a numerical value representing its relative significance in the yield rating. The sediment yield rating is the sum of values for the appropriate characteristics for each of the nine factors. Conversion of the numerical rating to sediment yield is made using a graph (see BLM form 7310-16).

SEDIMENT YIELD FACTOR RATING

SURFACE GEOLOGY (a)	SOILS (b)	CLIMATE (c)	RUNOFF (d)	TOPOGRAPHY (e)
(10)	(10)	(10)	(10)	(20)
a. Marine shales and related mudstones and siltstones	a. Fine textured; easily dispersed; saline-alkaline; high shrink-swell characteristics b. Single grain silts and fine sands	a. Storms of several days' duration with short periods of intense rainfall b. Frequent intense convective storms c. Freeze-thaw occurrence	a. High peak flows per unit area b. Large volume of flow per unit area	a. Steep upland slopes (in excess of 30%) b. High relief; little or no floodplain development
(5)	(5)	(5)	(5)	(10)
a. Rocks of medium hardness b. Moderately weathered c. Moderately fractured	a. Medium textured soil b. Occasional rock fragments c. Caliche layers	a. Storms of moderate duration and intensity b. Infrequent convective storms	a. Moderate peak flows per unit area b. Moderate volume of flow per unit area	a. Moderate upland slopes (less than 20%) b. Moderate fan or floodplain development
(0)	(0)	(0)	(0)	(0)
a. Massive, hard formations	a. High percentage of rock fragments b. Aggregated clays c. High in organic matter	a. Humid climate with rainfall of low intensity b. Precipitation in form of snow c. Arid climate, low intensity storms d. Arid climate; rare convective storms	a. Low peak flows per unit area b. Low volume of runoff per unit area c. Rare runoff events	a. Gentle upland slopes (less than 5%) b. Extensive alluvial plains
Factor value				

GROUND COVER (f)	LAND USE (g)	UPLAND EROSION (h)	CHANNEL EROSION AND SEDIMENT TRANSPORT (i)
(10)	(10)	(25)	(25)
Ground cover does not exceed 20% a. Vegetation sparse; little or no litter b. No rock in surface soil	a. More than 50% cultivated b. Almost all of area intensively grazed c. All of area recently burned	a. More than 50% of the area characterized by rill and gully or landslide erosion	a. Eroding banks continuously or at frequent intervals with large depths and long flow duration b. Active headcuts and degradation in tributary channels
(0)	(0)	(10)	(10)
Cover not exceeding 40% a. Noticeable litter b. If trees present understory not well developed	a. Less than 25% cultivated b. 50% or less recently logged c. Less than 50% intensively grazed d. Ordinary road and other construction	a. About 25% of the area characterized by rill and gully or landslide erosion b. Wind erosion with deposition in stream channels	a. Moderate flow depths, medium flow duration with occasionally eroding banks or bed
(−10)	(−10)	(0)	(0)
a. Area completely protected by vegetation, rock fragments, litter b. Little opportunity for rainfall to reach erodible material	a. No cultivation b. No recent logging c. Low intensity grazing	a. No apparent signs of erosion	a. Wide shallow channels with flat gradients and short flow duration b. Channels in massive rock, large boulders, or well vegetated c. Artificially controlled channels
Factor value			

Subtotal (a) – (g) | Subtotal (h) – (i) | TOTAL RATING = – – . – sc.ft./sq. mi./yr.

(Instructions on reverse)

Form 7310–16 (July 1971)

GENERAL INSTRUCTIONS

District Office prepares one copy for District file.

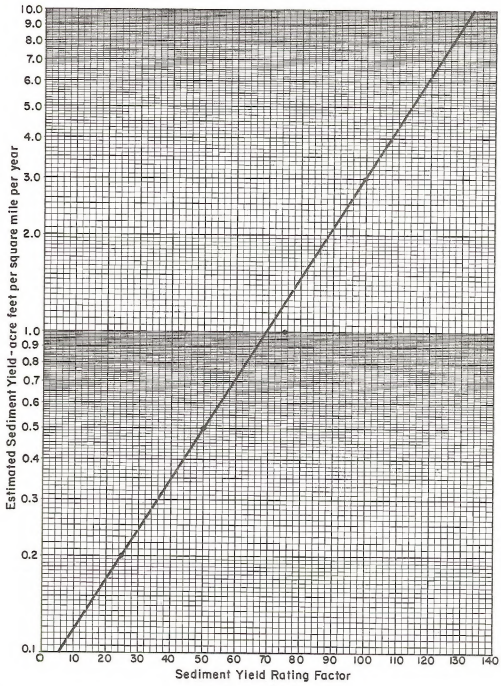
SPECIFIC INSTRUCTIONS

(Items not listed are self-explanatory)

Numbers indicate values assigned appropriate characteristics. Letters a, b, c, and d refer to independent characteristics to which full value may be assigned.

Interpolation between the sediment yield levels may be made. High values for columns (a) through (g) should correspond to high values for (h) and (i). If they do not, factors (a) through (g) should be reevaluated. If they do not correspond, then a special erosion condition exists.

Convert *Total Rating* to sediment yield by use of graph.



Appendix 2-9

PRESENT SEDIMENT YIELD PER YEAR BY ALLOTMENT
AND SOIL MAPPING UNIT

Allotment Name	Soil Mapping Unit No.	Acres	Sediment Yield Tons Per Acre	Tons Allotment	Acre Feet Per Sec	Acre Feet Allotment
Hawley Mountain	2A	2,425	-	-	-	-
	13D	170	-	-	-	-
	13E	1,098	0.28	307	0.11	0.189
	13F	509	0.33	168	0.13	0.103
	13G	3,023	0.43	1,300	0.17	0.803
	15D	2,035	0.26	529	0.10	0.318
	29A	4,925	-	-	-	-
	29D	971	0.26	256	0.10	0.152
	30A	855	-	-	-	-
	30E	277	0.26	72	0.10	0.043
	30G	694	0.31	215	0.12	0.130
	31AD	2,540	-	-	-	-
	32G	16,276	0.52	4,232	0.20	2.543
	35A	7,330	-	-	-	-
	35D	994	-	-	-	-
	36D	69	-	-	-	-
	36EG	566	0.31	175	0.12	0.106
	37D	185	0.26	48	0.10	0.029
	51A	5,919	-	-	-	-
	51D	2,419	0.26	629	0.10	0.378
	52D	2,220	-	-	-	-
	64A	740	-	-	-	-
	64D	3,051	-	-	-	-
	65A	299	-	-	-	-
	65D	3,128	-	-	-	-
	65EF	1,288	0.52	355	0.20	0.202
	71D	370	-	-	-	-
	75G	1,766	0.62	547	0.24	0.414
	90D	509	-	-	-	-
	90E	266	0.26	69	0.10	0.042
	90F	347	0.28	97	0.11	0.060
	95D	925	-	-	-	-
	95E	139	-	-	-	-
	95EG	185	0.26	48	0.10	0.029
	98E	879	-	-	-	-
	98G	1,723	0.26	448	0.10	0.269
Total		71,655		9,475		5.810
Jumpoff	17D	43	0.26	11	0.10	0.007
	32G	473	0.52	201	0.20	0.073
	65A	484	-	-	-	-
	65D	1,720	-	-	-	-
	65EF	1,481	0.52	385	0.20	0.231
	71A	213	-	-	-	-
	71D	299	-	-	-	-
	75G	5,060	0.62	1,569	0.24	0.948
	83A	4,687	0.31	-	-	-
Total		14,460		2,166		1.259

PRESENT SEDIMENT YIELD PER YEAR BY ALLOTMENT
AND SOIL MAPPING UNIT

Allotment Name	Soil Mapping Unit No.	Acres	Sediment Yield Tons Per Acre	Tons Allotment	Acre Feet Per Sec	Acre Feet Allotment
Pass Creek	13D	1,889	-	-	-	-
	13E	506	0.28	142	0.11	0.087
	13F	195	0.33	64	0.13	0.040
	13G	4,647	0.43	1,998	0.17	1.234
	29A	97	-	-	-	-
	29D	2,337	0.26	608	0.10	0.365
	30G	438	0.31	136	0.12	0.082
	31AD	97	-	-	-	-
	32G	1,558	0.26	405	0.10	0.243
	51D	4,830	0.26	1,256	0.10	0.755
	90D	623	-	-	-	-
	90E	196	0.26	51	0.10	0.031
	98G	536	0.26	139	0.10	0.084
Total		17,949		4,799		2.921
Spring Canyon	2A	8,276	-	-	-	-
	3D	7,095	-	-	-	-
	11DG	2,082	-	-	-	-
	29D	465	0.26	121	0.10	0.073
	30A	279	-	-	-	-
	30D	167	-	-	-	-
	30E	744	0.26	193	0.10	0.116
	30G	484	0.31	150	0.12	0.091
	32F	335	-	-	-	-
	32G	2,538	0.26	660	0.10	0.397
	46A	558	-	-	-	-
	47D	56	-	-	-	-
	51A	4,129	-	-	-	-
	65D	1,665	-	-	-	-
	65EF	37	0.26	10	0.10	0.006
	75G	5,621	0.31	1,743	0.12	1.054
	90D	1,730	-	-	-	-
	90E	670	0.26	174	0.10	0.105
	90F	74	0.28	21	0.11	0.013
Total		37,050		3,072		1.855
Uncle Ike	17A	663	-	-	-	-
	25DF	198	0.26	51	0.10	0.031
	45DG	940	0.38	357	0.15	0.220
	46A	208	-	-	-	-
	46D	1,583	-	-	-	-
	65A	2,848	-	-	-	-
	65D	2,176	-	-	-	-
	65EF	2,216	0.26	576	0.10	0.346
	70AF	6,963	0.26	1,803	0.10	1.084
	75G	514	0.31	159	0.12	0.096
	83A	6,171	-	-	-	-
	84D	3,422	-	-	-	-
Total		27,902		2,946		1.777

PRESENT SEDIMENT YIELD PER YEAR BY ALLOTMENT
AND SOIL MAPPING UNIT

Allotment Name	Soil Mapping Unit No.	Acres	Sediment Yield Tons Per Acre	Tons Allotment	Acre Feet Per Sec	Acre Feet Allotment
Warm Springs	13E	576	0.28	161	0.11	0.099
	13G	206	0.43	89	0.17	0.055
	30A	205	-	-	-	-
	30D	391	-	-	-	-
	30E	103	0.26	27	0.10	0.016
	30G	514	0.31	159	0.12	0.096
	31AD	164	-	-	-	-
	35A	82	-	-	-	-
	52D	2,960	-	-	-	-
	90D	534	-	-	-	-
	90E	514	0.26	134	0.10	0.080
	90F	462	0.28	129	0.11	0.079
Total		6,711		699		0.425
Williams Creek	15D	213	0.26	55	0.10	0.033
	31AD	38	-	-	-	-
	46E	473	0.28	132	0.11	0.081
	65D	1,003	-	-	-	-
	65EF	57	0.26	15	0.10	0.009
	70AF	1,969	0.26	512	0.10	0.308
	71D	95	-	-	-	-
	75G	1,515	0.31	470	0.12	0.284
Total		5,363		1,184		0.715
TOTAL:		181,090		24,341		14.762

PRESENT SEDIMENT YIELD PER YEAR BY ALLOTMENT
AND SOIL MAPPING UNIT

Allotment Name	Soil Mapping Unit No.	Acres	Sediment Yield Tons Per Acre	Tons Allotment	Acre Feet Per Sec	Acre Feet Allotment
Bear Canyon	32G	638	0.52	166	0.20	0.099
	35D	231	-	-	-	-
	36EG	303	0.31	94	0.12	0.057
	65D	949	-	-	-	-
	65EF	144	0.26	30	0.10	0.018
	71D	71	-	-	-	-
	90D	806	-	-	-	-
	90E	266	0.26	69	0.10	0.042
	95E	160	-	-	-	-
Total		3,538		359		0.216
Bell Mountain	15D	1,687	0.26	439	0.10	0.264
	36EG	18	0.31	6	0.12	0.003
	65D	1,747	-	-	-	-
	65EF	70	0.26	18	0.10	0.011
	70AF	2,847	0.26	740	0.10	0.445
	71A	264	-	-	-	-
Totals		6,633		1,203		0.723
Bernice	25DF	3,624	0.26	942	0.10	0.566
	45DG	3,027	0.38	1,150	0.15	0.709
	46A	314	-	-	-	-
	46D	995	-	-	-	-
	65A	215	-	-	-	-
	65EF	105	0.26	27	0.10	0.016
	75G	5,175	0.31	1,604	0.12	0.970
	80A	4,022	-	-	-	-
	80D	4,965	-	-	-	-
	80E	157	0.26	41	0.10	0.025
	84D	52	-	-	-	-
Total		22,687		3,764		2.286
Horse Creek	29A	349	-	-	-	-
	32G	110	0.26	29	0.10	0.017
	51D	93	0.26	24	0.10	0.015
	64A	1,490	-	-	-	-
	64D	94	-	-	-	-
	65D	2,843	-	-	-	-
	70AF	130	0.26	34	0.10	0.020
	75G	410	0.31	127	0.12	0.077
Total		5,519		214		0.129

PRESENT SEDIMENT YIELD PER YEAR BY ALLOTMENT
AND SOIL MAPPING UNIT

Allotment Name	Soil Mapping Unit No.	Acres	Sediment Yield Tons Per Acre	Tons Allotment	Acre Feet Per Sec	Acre Feet Allotment
Cedarville	15D	5,786	0.26	1,504	0.10	0.904
	17D	315	0.26	82	0.10	0.049
	32G	1,493	0.26	388	0.10	0.233
	65A	3,274	-	-	-	-
	65D	3,315	-	-	-	-
	65EF	304	0.26	79	0.10	0.048
	71D	288	-	-	-	-
	73E	309	-	-	-	-
	75G	4,571	0.31	1,417	0.12	0.857
Total		19,655		3,470		2.091
Howe Peak	32G	462	0.26	120	0.10	0.072
	45DG	2,689	0.38	1,022	0.10	0.630
	57Ad	12,771	-	-	-	-
	65D	5,041	-	-	-	-
	65EF	861	0.26	224	0.10	0.135
	71A	3,025	-	-	-	-
	71D	672	-	-	-	-
	75G	2,604	0.31	807	0.12	0.488
	77A	3,361	-	-	-	-
Total		31,486		2,173		1.325
Mahogany Butte	2A	13,954	-	-	-	-
	2D	1,514	-	-	-	-
	3D	13,964	-	-	-	-
	3E	129	0.26	34	0.10	0.020
	11DG	1,138	-	-	-	-
	17A	1,267	-	-	-	-
	17D	841	0.26	219	0.10	0.131
	29D	1,108	0.26	288	0.10	0.173
	32G	910	0.26	237	0.10	0.142
	46A	1,504	-	-	-	-
	47D	317	-	-	-	-
	51A	1,163	-	-	-	-
	57AD	4,008	-	-	-	-
	65A	3,800	-	-	-	-
	65D	495	-	-	-	-
	71A	792	-	-	-	-
	71D	1,069	-	-	-	-
	75EF	99	-	-	-	-
	75G	4,087	0.31	1,267	0.12	0.766
	90D	292	-	-	-	-
Total		52,451		2,045		1.232

PRESENT SEDIMENT YIELD PER YEAR BY ALLOTMENT
AND SOIL MAPPING UNIT

Allotment Name	Soil Mapping Unit No.	Acres	Sediment Yield Tons Per Acre	Tons Allotment	Acre Feet Per Sec	Acre Feet Allotment
Sinks	45DG	1,568	0.38	596	0.15	0.368
	46A	382	-	-	-	-
	46D	2,142	-	-	-	-
	57AD	2,778	-	-	-	-
	75G	669	0.31	207	0.12	0.125
	77A	12,242	-	-	-	-
Total		19,781		803		0.493
Wet Creek	29A	4,307	-	-	-	-
	56A	2,009	-	-	-	-
	64A	409	-	-	-	-
Total		6,806		-		-
Wigwam Butte	45DG	678	0.38	258	0.15	0.160
	46A	424	-	-	-	-
	46D	2,556	-	-	-	-
	57AD	2,081	-	-	-	-
	65A	1,431	-	-	-	-
	71D	4,336	-	-	-	-
	75G	3,781	0.31	699	0.12	0.423
Total		15,287		957		0.683
TOTAL:		183,843		14,988		9.178

PRESENT SEDIMENT YIELD PER YEAR BY ALLOTMENT
AND SOIL MAPPING UNIT

Allotment Name	Soil Mapping Unit No.	Acres	Sediment Yield Tons Per Acre	Tons Allotment	Acre Feet Per Sec	Acre Feet Allotment
Briggs Canyon	15D	3,182	0.26	827	0.10	0.497
	17D	6,322	0.26	1,644	0.10	0.988
	65A	1,842	-	-	-	-
	65D	419	-	-	-	-
	73E	848	-	-	-	-
	75G	136	0.31	42	0.12	0.026
	80A	366	-	-	-	-
	83A	236	-	-	-	-
	84D	1,340	-	-	-	-
Total		14,691		2,513		1.511
Burnt Canyon	32G	283	0.26	74	0.10	0.044
	65D	2,082	-	-	-	-
	65EF	708	0.26	184	0.10	0.111
	71A	202	-	-	-	-
	75G	2,276	0.31	706	0.12	0.427
	90E	162	0.26	42	0.10	0.024
Total		5,713		1,006		0.607
Cedar Point	45DG	326	0.38	124	0.15	0.076
	46A	479	-	-	-	-
	46D	367	-	-	-	-
	75G	102	0.31	32	0.12	0.019
Total		1,274		156		0.095
Eight Mile Canyon	45DG	1,284	0.38	488	0.15	0.301
	65D	400	-	-	-	-
Total		1,684		488		0.301
Kyle Canyon	46D	30	-	-	-	-
	75G	681	0.31	211	0.12	0.128
Total		711		211		0.128
Sawmill Canyon	30D	1,775	-	-	-	-
	30E	38	0.26	10	0.10	0.006
	30G	505	0.31	157	0.12	0.095
	32E	19	-	-	-	-
	32F	1,133	-	-	-	-
	32G	906	0.26	236	0.10	0.142
	90D	538	-	-	-	-
	90E	302	0.26	79	0.10	0.047
	95D	151	-	-	-	-
	95E	472	-	-	-	-
Total		5,839		482		0.290

PRESENT SEDIMENT YIELD PER YEAR BY ALLOTMENT
AND SOIL MAPPING UNIT

Allotment Name	Soil Mapping Unit No.	Acres	Sediment Yield Tons Per Acre	Tons Allotment	Acre Feet Per Sec	Acre Feet Allotment
Summit	31AD	76	-	-	-	-
	32G	697	0.26	181	0.10	0.109
	35A	338	-	-	-	-
	35D	1,395	-	-	-	-
	90D	403	-	-	-	-
	95E	307	-	-	-	-
Total		3,216		181		0.109
TOTAL:		33,128		5,037		3.041
TOTAL ES AREA:		398,061		44,366		26.981

STREAM HABITAT SURVEYS: REFERENCE

MEASUREMENT OF STREAM WIDTH AND DEPTH

1. Measure stream width to nearest foot. When a transect bisects separated channels, list each channel separately from left to right looking downstream, in alphabetical order, i.e., T1a, T1b, etc.

2. Measure depth at 1/4, 1/2, and 3/4 width to nearest inch. Sum of measurements ÷ 4 = avg. depth.

BANK COVER MEASUREMENTS (50 feet above and below transect)

4 - Medium to heavy cover of trees and/or tall shrubs
3 - Scattered trees and/or dense tall shrubs
2 - Medium to heavy cover of tall grass, forbs and/or low shrubs
1 - Scattered low grass, forbs and/or small shrubs or exposed bank.

(Vegetation must be within 1/2 its height of water's edge to qualify as streambank cover.)

BANK STABILITY

4 - Bank totally stable
3 -≥50% stable
2 -<50% stable
1 - Totally unstable

BANK COVER - Dominant composition of streambank components 50 feet above and below the end of transect. Composition classes can be boulder, gravel bar, exposed soil, grass and rocks, grass and soil, soil and rocks, rooted soil (trees and brush), etc.

POOL FREQUENCY AND LOCATION

Each intersected pool width is measured to nearest foot. Designate location by symbol L (left), R (right), and C (center) in reference to left-hand bank facing downstream.

POOL CLASS RATINGS

Size (Measurements refer to the longest axis of the intersected pool.)
3 - Pool larger or wider than average width of stream.
2 - Pool as wide or long as average stream width.
1 - Pool much shorter and narrower than average stream width.

Depth Ratings	Total Ratings	Pool Class
3 = over 3 feet	8-9	1
2 - 2-3 feet	7	2
1 - under 2 feet	*5-6	3
	4-5	4
	3	5

Cover Ratings
3 - Abundant cover
2 - Partial cover
1 - Exposed

*Sum of 5 must include 2 for depth and 2 for cover.

UNGULATE DAMAGE
4 - Bank stable; 90-100% impact free.
3 - < 50% damage; 50-90% impact free.
2 - > 50% damage; 50-90% damage.
1 - Excessive; 90-100% damage.

CLASSIFICATION OF BOTTOM MATERIAL

Fine Gravel	0.1 - 1.0 inches
Coarse Gravel	1 - 3 inches
Small Rubble	3 - 6 inches
Large Rubble	6 - 12 inches

(See ffield form for others)

(measure total intercepted bottom materials to nearest foot. Aspect, not individual materials, should govern classification.)

MEASUREMENT OF WATER TURBIDITY

Clear)
Milky) Account for source
Muddy)

FISHERMAN ACCESS

Remote - No trail
Low-standard trail - Game or nonmaintained trail
Improved trail - Maintained
Low-standard roads - Without drainage
Improved roads - With drainage

AQUATIC VEGETATION

R - rooted - (record to nearest foot of intercepted vegetation)
C - clinging

TICKLER LIST FOR REMARKS

1. Dams and barriers
2. Pollution information
3. Channel changes (manmade)
4. Erosion potential
5. Fish (number--size--species)
6. Creel information and fishing pressure
7. Number fish planting access sites
8. Spring sources
9. Water diversions
10. Beaver activity
11. Spawning gravel availability
12. Camera point information
13. Channel debris
14. Loss of streamflow

STREAM HABITAT SURVEY FIELD FORM

1. State	3. District	5. Drainage	7. Location: T. R. Sect.	9. Investigators
2. County	4. Resource Area - P.U.	6. Stream	8. Survey Station	10. Date

| | | Water Surface | | | | | | Stream Bottom | | | | | | | | | | | | | | | | | | | | Stream Bank | | | | | | | | | | | | | | | | | | |

APPENDIX 2-11

INVERTEBRATE AQUATIC ORGANISMS OF STREAM IN THE LITTLE LOST-BIRCH CREEK AREA

Taxon	Drainage	
	Little Lost	Birch Creek
Optioservus quadrimaculatus	X	X
Chironomidae	X	X
Simulium sp.	X	X
Tipula sp.	X	X
Baetix tricaudatus	X	X
Ephemerella grandis	X	X
E. inermis	X	X
Acroneuria pacifica	X	X
Isoperla fulva	X	X
Brachy centrus occidentalis	X	X
Hydro psyche sp.	X	X
Arcynopterys parallela	X	X
Pteronarcella badia	X	X
Glossosoma sp.	X	X
Hirudinea	X	X
Rhithrogena hageni	X	X
Paraleprophlebia heteronea	X	
Alloperla sp.	X	X
Classenia sabulosa	X	X
Isogenus sp.	X	X
Arctopsyche grandis	X	X
Lepidostoma sp.	X	X
Lymnaea sp.		X
Physa sp.	X	X
Gyraulus sp.	X	X
Pisidium sp.	X	X
Bidessus sp.	X	
Dicranota sp.	X	X
Sialis sp.	X	
Ryacophila acropedes	X	X
Turbellaria	X	X
Hydracarina	X	
Heleidue	X	
Capnia sp.	X	
Isoperla mormona	X	X
Pteronarcys californica	X	X
Hesperophylas sp.		X
Hyalella asteca	X	
Hydaticus sp.		X
Ephemerella favilineu	X	
Ameletus oregonensis	X	
A. velox	X	
Tricorythodes minutus	X	
Drusinus sp.	X	
Parapsyche elsis	X	

Source: Andrews, 1972

APPENDIX 2-12

KNOWN CULTURAL RESOURCES IN THE LITTLE LOST-BIRCH CREEK UNIT

Cultural Resources	Attributes/Condition	Period Prehistoric	Period Historic
A. National Register 10-BT-3, 10-BT-9, 10-BT-10, and 10-BT-11 a/	The Birch Creek Rockshelters. A group of Rockshelters excavated by Idaho State University in 1961. Produced evidence that the Birch Creek Valley has been occupied by man continually for over 10,000 years.	x	
B. Possible National Register Eligible b/			
10-BT-1	Rockshelter with pictograph; good depth, pioneer excavation by Idaho State University, 1950's, damaged by vandals.	x	
10-BT-8	Campground around a spring, good depth, several extensive lithic scatters nearby. Disturbed by erosion and trampling.	x	
10-BT-28 and 10-BT-248	Two Tipi Ring Sites; 80 single and multiple course stone rings located near a stream. Disturbed by erosion, trampling, relic collectors and material removal. A road runs through some of the rings.	x	
10-BT-46	Rockshelter with pictographs; Jackknife Cave, excavated by Idaho State University 1961-1963.	x	
10-BT-50	Rock alignment, stone ring structure; large enough to shelter two people, lithic detritus present. Site is undisturbed.	x	
10-BT-157	Rockshelter; good depth; damaged by relic collectors.	x	
10-BT-158	Rockshelter with smoke-stained roof; good deposits. Undisturbed.	x	
10-BT-159	Rock overhang with pictograph; good depth, undisturbed.	x	
10-BT-160	Campsite around a spring; good depth disturbed by erosion and trampling.	x	
10-BT-162	Rockshelter with artifacts and bones; good depth, undisturbed.	x	
10-BT-163	Rockshelter with pictograph; good depth, disturbed by trampling and erosion.	x	
10-BT-165	Rockshelter with interior lithic detritus concentrations; good depth, some erosion damage.	x	

10-BT-170	Multifunctional prehistoric site; hunting blinds talus shelter-pits, big game trails and extensive concentrations of lithic detritus and projectile points. Activities such as hunting, butchering, hide preparations and stone tool manufacturing took place at this site (based on surficial evidence). Site is undisturbed and it is the most significant site in the ES area.	x	
10-BT-171	Lemon's Freight Station; located on a small stream near the Little Lost River, this station served as a rest stop for teamsters freighting supplies between Arco and the Wilbert Mine on North Creek. Two small mounds of earth and some glass and metal fragements are all that remain of the station. The site has been damaged by erosion, trampling and relic collectors.		x
10-BT-187	Rock alignment; circle of stones, piled three high, and a concentration of lithic detritus. Circle is large enough to accommodate one person. Undisturbed.	x	
10-BT-195	Rock alignment; circle of flat stones piled three and four stones high. Structure is large enough to shelter one person. Undisturbed.	x	
10-BT-198	Campsite around a spring; good depth some erosion and trampling. Abandoned mine shaft located nearby.	x	
10-BT-199	Campsite around a spring; some depth, erosion and trampling, concentration of lithic detritus.	x	
10-BT-200	Campsite near a spring; some depth, concentration of lithic detritus, disturbed by erosion and trampling.	x	
10-BT-201	Campsite near a spring; some depth, heavy concentration of lithic detritus. Disturbed by erosion and trampling.	x	
10-BT-206	Rockshelter with associated concentration of lithic detritus. Some depth, undisturbed.	x	
10-BT-219	Campsite around a spring; good depth, heavy concentration of tools and lithic detritus. Damaged by erosion and trampling.	x	
10-BT-223	Rockshelter with pictographs; good depth, damaged by relic collectors.	x	
10-BT-224	Rockshelter with pictographs; good depth, undisturbed.	x	
10-BT-238	Campsite around a spring; good depth, extensive concentration of tools and lithic detritus.	x	
10-CL-54 a/	Campsite around a spring; good depth, damaged by erosion and trampling.	x	
10-CR-529	Campsite around a spring; good depth, some lithic detritus. Site damaged by erosion and trampling.	x	

10-CR-531	Campsite around a spring; some depth, extensive scatter of tools and lithic detritus, damaged by erosion and trampling.	x	
10-CR-532	Campsite around a spring; good depth, extensive scatter of tools and lithic detritus. Damaged by erosion and trampling.	x	
10-CR-542	Rock alignment, historical; a linear arrangement of five, large quartzite rocks and some wooden pegs. Site may be linked to fur trader and explorer, Alexander Ross and his travels through the Lost River Valley in the 1820's.	x	
10-CR-543	Rockshelter with pictograph; good depth undisturbed.	x	
South Creek Cabins a/	A group of six cabins located on private land near South Creek in the Little Lost River Valley. Efforts to obtain information about this site have been unsuccessful. The age of the buildings is unknown.		x
D.B. Hawley Store & Home a/	A group of six log buildings located on Highway 22, approximately one mile east of Howe, Idaho; the structures once served as the store and home of D.B. Hawley, the founder of Howe. The structures, including one large two-story building, date from the 1880's.		x
Misc. Prehistoric Sites	150 campsites, rockshelters, caves, hunting blinds and surface lithic scatters. Although these sites do not show, from surface indications, as much potential as other potential National Register eligible sites, they could be nominated on a group basis or in association with an apparently more significant site.	x	
C. Non-National Register Eligible Sites			
10-BT-241 a/	Historic Bannock-Shoshone campsite. A resident of Howe, Idaho identified a campground on the Little Lost River prior to W.W.I. which was used annually by the Bannock-Shoshone people. The site has been destroyed by grazing and agricultural activities.		x
Pioneer Cemetaries Bernice 10-BT-242 Johnson Grave 10-BT-243 Clyde 10-BT-244 Howe, Reno-Goddard	Cemetaries are not usually considered to be eligible for nomination to the National Register. The five pioneer cemetaries in the Little Lost-Birch Creek unit are all in reasonably good condition, and all receive periodic care. The Reno-Goddard Cemetary is located in the Birch Creek Valley, and the rest are in the Little Lost River Valley. The former is notable for its isolation, its weathered, hand-hewn picket fence and the early date of one grave (1892).		x
D. National Historic Trails Nez Perce (Nee-Me-Poo) Trail & Birch Creek Massacre Site a,b,c/	A portion of the Nez Perce (Nee-Me-Poo) Trail runs through the Birch Creek Valley. The trail is now under study for inclusion in the National Trails System. Located on Birch Creek is the approximate site where Nez Perce warriors killed a group of teamsters. The site is identified by a monument and a highway rest area.		x

a/ Private Property
b/ Federal
c/ State Property

APPENDIX 2-13

DETERMINATION OF VISUAL RESOURCE MANAGEMENT (VRM) CLASSES

VRM classes comprise scenery quality, visual sensitivity levels, and distance zones.

Scenery quality is determined from a quantified scenic evaluation process. Three quality ratings result outstanding (a), characteristic (b), and minimal (c).

Visual sensitivity levels are an index of the relative importance or value of visual response to an area. Commonly considered criteria are:

1. Traffic counts for highways and roads;
2. Recreation use of public land types, use counts, local, regional, national significance;
3. Community attitudes;
4. Land use relationships

Distance zones are important because, in most cases, the closer viewers are to an object, the more contrast or detail they see. The distance zones are:

1. Foreground: from 0 mile to 0.5-1 mile;
2. middleground: from 0.5-1 mile to 3-5 miles;
3. background: from 3-5 miles to 15 miles;
4. seldom seen: beyond 15 miles or in closer areas which are screened by landform or vegetation from the common viewing points. After the above VRM class combinations are determined, they are then compared with a chart to determine the VRM classes.

DETERMINATION OF VISUAL IMPACT

Whether or not a proposed project would create a visual impact is determined through the use of a contrast rating. Each type or proposed project is quantitatively analyzed to determine (predict) what contrast each would create in the foreground, middleground, and background distance zones, i.e., what deviation from the form, line, color, and texture of the surface and vegetation were caused by the addition of structures or alterations to the existing landscapes. Initially, this analysis is not site specific, but assumes optimum viewing conditions. The contrast ratings (numerical scores) are then compared with the numerical limits for each VRM class. Contrast ratings greater than the limits for the VRM classes create discordant deviations and are considered to be visual impacts. Contrast ratings were prepared for each type of activity expected under the proposed action and each alternative for the "worst case" in each of the landscape types. The next step carries the analysis to the site specific or project level. Every proposed project is examined to see in which VRM class area it lies and is analyzed for design and visibility characteristics which may increase or decrease the contrast rating and consequently visual impact.

IMPACT MITIGATION

Mitigation of visual impacts involves implementation of design measures to reduce the contrast changes to landform and vegetation caused by the addition of structures or alterations to the existing environment, to bring the numerical scores for contrasts within or as close as possible to the limits for the VRM class.

APPENDIX 3-1

METHODOLOGY USED TO DETERMINE PRODUCTION FOR TREATMENT AREAS

Some seedings presently invaded by big sagebrush are producing grass at a reduced rate. Roto beating of these seedings would reduce brush cover to release additional nutrients and moisture to the grass plants. Present sagebrush canopy cover in the seedings that are proposed for treatment varies from 10% to 30%. Hull and Clomp, in 1974, found that the elimination of an 11% canopy cover of sagebrush would double production of grass and that elimination of a 33% canopy cover of sagebrush would triple production of grass.

Present production of seedings with planned treatments ranges from 200 to 250 pounds per acre. It is expected that production can be increased to 400 to 500 pounds per acre by reductions in the existing sagebrush cover. At the median expected production of 450 pounds per acre and 70% utilization, a production of 2.5 acres per AUM should be realized. Therefore, on the 4,500 acres of planned seeding treatment (2,500 acres of roto beating and 2,000 acres of burn) the possible production is 1,800 AUMs (4,500 acres ÷ 2.5 acres per AUM = 1,800 AUMs).

Rotobeating, interseeding and burning would be done on areas that are predominantly vegetated by big sagebrush. These big sagebrush areas occur on four range sites (gravelly loam 8-11", alluvial bottom 8-13", gravelly loam 11-13" and gravelly loam 13-16") within the ES area. The ecological site descriptions (Appendix 2-2) for the above range sites have the common factor that when big sage is 15 to 30% and grasses are 50 to 70% of the composition of the potential plant community the grass production will be 100 to 600 pounds per acre.

The median production for these four range sites would be 350 pounds per acre. Therefore, assuming 800 pounds of forage per AUM and 50% utilization on the grasses the estimated potential stocking rate would be 4.6 acres per AUM. At this rate, the following production could be expected from the planned vegetative treatments:

Roto beating followed by seeding, 8,000 acres ÷ 4.6 acres/AUM = 1,734 AUMs

Burning of native vegetation, 5,000 acres ÷ 4.6 acres/AUM = 1,087 AUMs

Interseeding (figured at the lowest potential production of 16 acres per AUM rather than the median potential production due to uncertanties involved with the method), 5,500 acres ÷ 16 acres per AUM = 344 AUMs.

Under the proposed action, production expected from vegetative treatment is lower then the above estimates due to individual site factors and treatment factors associated with each treatment area.

APPENDIX 3-2

COMPUTATION OF CHANGES IN FORAGE PRODUCTION

The future estimated production for the proposed action and each of the alternatives is based on the predicted changes in condition class.

Under the proposed action it is assumed that all vegetation in suitable areas would improve by one condition class. For the purpose of estimating future production the present production was determined for each allotment, by multiplying the number of acres in each ecological site times the production of grass and forbs only (taken from the site production tables which were prepared for the ES area, see attached) of that site in each of the four condition classes. The totals for each condition class were totaled to arrive at a production figure for the entire allotment.

To predict the future production of an allotment, the number of acres in each ecological site was multiplied by the production of grass and forbs only on that site in the new condition classes and the results were totaled to get future total production for the allotment.

The present production is then subtracted from the predicted future production to get the predicted increase in AUMs. Since only grass and forbs were used to predict future production, the resulting figure can be multiplied by 50% proper use to get an estimate of the livestock AUMs available. (See computation at bottom of the attached allotment production worksheet for Mays Allotment).

SITE PRODUCTION TABLE

NAME: Limey Gravelly 8-11 CONDITION: Excellent

	WEIGHT (lbs/Acre)
Grass:	
1. Agsp	256
2. Pose	11
3. Stco	1
4. Orhy	1
5. Pone	1
Forbs:	
1. Phmu	5
2. Phho	2
3. Eriog	1
4. Erige	1
5. Astra	1
Shrubs:	
1. Ararn	200
2. Eriog	2
Total Production	482

SITE PRODUCTION TABLE

NAME: Limey Gravelly 8-11 CONDITION: Good	WEIGHT (lbs/Acre)
Grass:	
1. Agsp	130
2. Pose	15
3. Orhy	1
4. Stco	4
Forbs:	
1. Phmu	4
2. Eriog	2
3. Other forbs	2
Shrubs:	
1. Lepu	1
2. Hana	1
3. Atco	5
4. Ararn	161
5. Arar 8	13
6. Atnu	1
Total Production	340

SITE PRODUCTION TABLE

NAME: Limey Gravelly 8-11 CONDITION: Fair	WEIGHT (lbs/Acre)
Grass:	
1. Spcp	2
2. Agsp	71
3. Pose	7
4. Stco	2
5. Ority	3
6. Orex	1
7. Sihy	1
8. Other Grasses	1
Forbs:	
1. Phho	1
2. Phmu	1
3. Erige	1
4. Other Forbs	4
Shrubs:	
1. Ararn	190
2. Arar	13
3. Atco	12
4. Eula	3
5. Oppo	1
6. Hana	3
7. Artrw	2
8. Arsp	1
9. Other Shrubs	2
Total Production	322

SITE PRODUCTION TABLE

NAME: Limey Gravelly 8-11	CONDITION: Poor	WEIGHT (lbs/Acre)
Grass:		
1. Agsp		3
2. Pose		3
3. Sihy		7
4. Orhy		1
5. Orex		2
6. Pone		2
Forbs:		
1. Phmu		2
2. Phho		1
3. Erige		1
4. Other Forbs		1
Shrubs:		
1. Ararn		282
2. Atco		3
3. Oppo		3
4. Other Shrubs		1
	Total Production	312

Appendix 3-2

ALLOTMENT Mays

PRODUCTION FIGURES - CONSIDER GRASS AND FORBS ONLY

Ecological Site		PRESENT PRODUCTION (lbs/Ac)											
		Excellent			Good			Fair			Poor		
		*Prod	Acres	AUMs	*Prod	Acres	AUMs	*Prod	Acres	AUMs	*Prod	Acres	AUMs
Artw	loamy 8-12	247			216	550	149	123	375	58	41		
Artv	loamy 13-16	323			298			167			53		
Ararn	limy Gravelly 8-11	280			158	204	40	95	75	9	23		
Arar8	Gravelly 11-13	292			160			66	246	20	29		
Artr4	Gravelly 13-16	330			298			167			92		
Arara	Dry Gravelly	286						86			43		
Atco	Saline Gravelly	120			117	8	1	120	7	1	49		
Atnu	Saline Flat	264			178			92			44		
Juos	Shallow Breaks	82			69			56			23		
Cele	Steep Limestone	246			218			88	58	6	35		
Carex	Meacow Semi-Wet	1752			1385			1018			773		
Tanu	Windswept	130			124			123			33		
Eula	Playa	120			95			61			5		
Artr4	Alluvial Bottoms	763			511			239			464		
Present Total		X			X		190	X		94	X		

Appendix 3-2 (continued)

ALLOTMENT Mays

PRODUCTION FIGURES - CONSIDER GRASS AND FORBS ONLY

Ecological Site	FUTURE PRODUCTION (lbs/Ac) Excellent			Good			Fair			Poor		
	*Prod	Acres	AUMs	*Prod	Acres	AUMs	*Prod	Acres	AUMs	*Prod	Acres	AUMs
Artrw loamy 8-12	247			247	550	170	216	375	101		123	
Artrv loamy 13-16	323			323			293			167		
Ararn Limy Gravelly 8-11	280			280	204	71	158	75	15	95		
Arar8 Gravelly 11-13	292			292			160	246	49	66		
Artr4 Gravelly 13-16	330			330			298			167		
Arara Dry Gravelly	286			286			186			86		
Atco Saline Gravelly	120			102	8	1	117	7	1	20		
Atnu Saline Flat	264			264			178			92		
Juos Shallow Breaks	82			82			69			56		
Cele Steep Limestone	246			246			218	58	16	88		
Carex Meadow Semi-Wet	1752			1752			1385			1018		
Tanu Windswept	130			130			124			123		
Eula Playa	120			120			95			61		
Artr4 Alluvial Bottoms	763			763			511			259		
Future Total	X			X		242	X		182	X		

GrandTotal Future AUMs = 424

Minus Grand total present AUMs = 284

AUMs increased 140 X 50% (proper use) = 70 AUMs available.

*Production in each of the condition classes was taken from the Ecological Site Production Tables and consider grass and forbs only.

APPENDIX 3-3

The DYRAM Model

DYRAM, the model used in determining secondary impacts uses industry earnings in combination with a 20-sector industry expected transaction matrix, compiled from the national input-output table, in order to estimate net exports or imports by industry for the economy of a given area. Multipliers for each industry are computed; they refer to impacts on personal income, not business income. The reader is directed to The Annals of Regional Science, November 1975, pp. 44-50, for a detailed mathematical explanation of the model.

LITERATURE CITED

LITERATURE CITED

Anderson, B.P. and Henderson, D.M., 1978. A Survey of Rare Plants, Little Lost Birch Creek Planning Unit. 33 pp.

Andrews, Douglas A., 1972. An Ecological Study of the Lost Streams of Idaho With Emphasis on the Little Lost River. An unpublished thesis, University of Idaho. 61 pp.

Autenrieth, Editor, Guidelines for the Management of Pronghorn Antelope, Pronghorn Antelope Workshop. Jasper Park, British Columbia, Canada. 1978. 54 pp.

Department of Commerce, Bureau of Census, Number of Inhabitants, Idaho, 1960, 1970.

U.S. Department of Interior, Bureau of Land Management, 1978. Report on 1977 Ranch Budgets in the Little Lost-Birch Creek Grazing Environmental Statement Area, Economics Staff, Denver Service Center, unpublished.

U.S. Department of Interior, Bureau of Land Management, 1978. Social-Economic Data System, unpublished data.

U.S. Department of Interior, Bureau of Land Management, 1978. Social Values Questionnaire, unpublished data.

U.S. Department of Interior, Bureau of Land Management, 1979. Ranch Operator Attitudes Survey (telephone), unpublished data.

Campbell, R.B., 1970. Pronghorn, Sheep, and Cattle Range Relationships in Carter County, Montana. An unpublished thesis, Montana State University. 87 pp.

Clebsch, Alfred Jr., Waite, H.A. and Decker, S.O., 1974. The Availability of Water in the Little Lost River Basin, Idaho. Water Information Bulletin No. 37, Idaho Department of Water Resources. 60 pp.

Cook, C.W., 1966. Carbohydrate Reserves in Plants. Utah State University paper. 9 pp.

Duff, D.A., 1978. Livestock Grazing Impacts on Aquatic Habitat in Big Creek, Utah. Bureau of Land Management. 15 pp.

Garrison, George A., 1972. Carbohydrate Reserves and Response to Use; in Wild Shrubs - Their Biology and Utilization. C.M. McKell, et al., eds: U.S. Department of Agriculture, Forest Service, General Technical Report INT-1, Intermountain Forest and Range Experiment Station, Ogden, Utah.

Gibbons, R.P., and H.G. Fissey, 1975. The Influence of Grazing Management on Vegetation on the Red Desert Region of Wyoming. Wyoming Agricultural Experiment Station. Science Monolog No. 29.

Harnis, Roy O., 1968. Vegetation Changes Following Livestock Exclusion on the National Reactor Testing Station, Southeastern, Idaho. Unpublished Masters Thesis, Utah State University. 164 pp.

Heady, H.F., 1961. Continuous Versus Specialized Grazing Systems: a Review and Application to the California Annual Type. Journal of Range Management. 23: 59-61.

Henderson, D.M., Johnson, F.D., Packard, P., and Steel, R., 1977. Endangered and Threatened Plants of Idaho, A Summary of Current Knowledge. University of Idaho Forest and Wildlife Experiment Station, Moscow, Idaho. 72 pp.

Hormay, August L., September, 1970. Principals of Rest-Rotation Grazing and Multiple Use Land Management. Bureau of Land Management Publication. 16 pp.

Hubbard, W.A., 1951. Rotational Grazing Studies in Western Canada. Journal of Range Management. 4: 25-29.

Hull, A.C., Jr. and Klomp, G.J., 1974. Yield of Crested Wheatgrass Under Four Densities of Big Sagebrush in Southern Idaho. USDA Technical Bulletin Number.

Hyder, Donald N. and W.A. Sawyer, 1951. Rotation Deferred Grazing as Compared to Season-Long Grazing on Sagebrush Bunchgrass Ranges in Oregon: Journal of Range Management, V. 4, pp. 30-34.

Idaho Department of Employment, The Labor Force in Idaho, 1975, 1976.

Idaho Department of Employment, unpublished data.

Idaho Department of Water Resources, Population and Employment Forecast - State of Idaho Baseline Projection 1975-2000, Center For Research, Grants, and Contracts, Boise State University, July, 1978.

Idaho State Fish & Game., 1978. Telephone contacts by McCarty, Robert S., Wildlife Biologist, Bureau of Land Management, and Sherwood, Robert., Idaho State Fish & Game.

Johnson, W.M., 1965. Rotation, Rest-Rotation and Season Long Grazing on Mountain Range in Wyoming. USDA, FS, Research Paper RM 14.

Knowles, C.J., 1975. Range Relationships of Mule Deer, Elk and Cattle in Rest Rotation Grazing System During Winter and Spring. Unpublished thesis, Montana State University 111 pp.

Komberic, T.J., 1976. Range Relationships of Mule Deer, Elk and Cattle in a Rest Rotation Grazing System During Winter and Spring. Unpublished thesis, Montana State University. 79 pp.

Leithead, H.L., 1960. Grass Management Pays Big Dividends. Journal of Range Management. 13: 206-210.

Mackie, R.J., 1970. Range Ecology and Relations of Mule Deer, Elk and Cattle in the Missouri River Breaks. Wildlife Monograph No. 20. 77 pp.

Martin, W.E., and Smith A.H., 1968. The Southwestern Range Livestock Industry as a Sector of Modern Commercial Agriculture. Proceedings of the Western Agricultural Economics Research Council, University of Arizona Press.

McLean, W.T. and E.W. Tisdale, 1972. Recovery Rate of Depleted Range Sites Under Protection From Grazing: Journal of Range Management, V. 25, No. 3 pp. 178-184.

Owensby, Glenton E., Ed F. Smith, and Kling L. Anderson, 1973. Deferred Rotation Grazing With Steers in the Kansas Flint Hills: Journal of Range Management, V. 26, No. 6, pp. 393-395.

Plog, Fred, and Hill, James N. Explaining Variability in the Distribution of Sites in the Distribution of Prehistoric Population Aggregates. Editor, Gumerman, George J., Prescott College Anthropological Reports No. 1. Prescott College, Prescott, Arizona. 1971.

Ratliff, Raymond D. and Reppert, Jack N., 1974. Vigor of Idaho Fescue Grazed Under Rest Rotation and Continuous Grazing. Journal of Range Management, V. 27, No. 6 pp. 447-449.

Ratliff, Raymond D., Reppert, Jack N., and McConnell, Richard J., 1972. Rest Rotation Grazing at Harvey Valley, Range Health, Cattle Gains, Cost. Research Paper PSW-77, USDA, Forest Service, Pacific SW Forest and Range Experiment Station.

Reynolds, Timothy D., 1978. The Response of Native Vertebrate Populations to Different Land Management Practices on the I.N.E.L. Site. Unpublished thesis, Idaho State University.

Rice, Barbara and Westoby, Mark., 1978. Vegetative Responses of Some Great Basin Shrub Communities Protected Against Jack Rabbits or Domestic Stock. Journal of Range Management, Volume 31, No. 1, January, 1978.

Schultz, J.L., 1970. Sociocultural Factors in Financial Management Strategies of Western Livestock Producers, USDA.

Skovlin, J.M., et. al., 1968. The Influence of Cattle Management on Deer and Elk. Transcript North American Wildlife Conference 33. pp. 169-183.

Society for Range Management, 1974. Glossary of Terms Used in Range Management, 2nd Edition. Compiled and edited by Range Term Glossary Committee, published by Society for Range Management, V. 27, pp. 107-110.

State of Idaho., 1978. Population and Employment Forecast - State of Idaho, Series 2 - Projections 1975-2000. Department of Water Resources and Boise State University, Center for Research, Grants, and Contracts.

Stevens, D.M., 1975. Wyoming Mountain Valley Cattle Ranching in 1973 and 1974 - An Economic Analysis, Laramie, Wyoming, University of Wyoming Agricultural Experiment Station Research Journal.

Stoddard, Smith and Box., 1975. Range Management, Third Edition. McGraw-Hill. p. 362.

Thompson, Larry S., 1977. Wildlife and Land Use Change, Some Considerations in Assessive Impact Risk. Western Wildlands. pp. 19-24.

U.S. Department of Agriculture, Soil Conservation Service, 1976. Idaho Plant List. 166 pp.

U.S. Department of Commerce, Bureau of Census. Population Estimates and Projections. Series P. 25. Nov. 66, - April 1977.

U.S. Department of Commerce, Bureau of Economics Analysis, 1978. Personal Income by Major Sources, 1971-1976. Regional Economics Information Systems.

U.S. Department of Interior, Bureau of Land Management, 1978. Per Capita Personal Income. BLM Socio-Economic Data System.

U.S. Department of Interior, Bureau of Land Management, 1977. Phenology Studies of the Little Lost-Birch Creek Planning Unit.

U.S. Department of Interior, Bureau of Land Management, 1977. Southeast Idaho Socio-Economic Profile. Harbridge House, Inc.

U.S. Department of Interior, Geological Survey, 1976. Water Resources Data for Idaho 1961 - 1975.

U.S. Federal register, July 1, 1975 and June 16, 1976. Threatened and Endangered Plants.

U.S. Fish & Wildlife. Formal Consultation Relative to Threatened and Endangered Wildlife.

Van Velson, R., 1977. The Rainbow Trout in the North Platte Valley. Nebraska Game and Parks Commission. Project Report F-4-R. 14 pp.

Wellner, C.A., Johnson, F.D., 1974. Research Natural Area Needs in Idaho. College of Forest, Wildlife, and Range Science, University of Moscow. Textbook. 179 pp.

Winegar, H.H., 1977. Camp Creek Channel Fencing, Plant, Wildlife, Soil and Water Resources. Rangeman's Journal 4 (1). 10-12 pp.

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